

Ecology's G.O.L.D. Plan

A Model Waste Reduction and Recycling Plan for State Agencies

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G.O.L.D. PLAN FOR THE WASHINGTON STATE DEPARTMENT OF ECOLOGY

INTRODUCTION

In 1989, the Washington State Legislature passed the Waste Not Washington Act Chapter 70.95 RCW, which made several major changes in how the state manages its waste. Reducing waste and recycling are now the top two priorities for managing solid waste. The Legislature also set a goal for the state to achieve a 50 percent recycling rate by 1995.

In order to achieve the 50 percent goal, the Act requires all state agencies and institutions to participate by reducing and recycling the solid and hazardous wastes they generate. The Department of Ecology and the Department of General Administration created a comprehensive plan to make government the leaders in waste reduction and recycling. plan., the Government Options to Landfill Disposal (G.O.L.D.), was completed in January 1991

OBJECTIVES OF THE G.O.L.D. PLAN

The primary objective of the State G.O.L.D. Plan is for state agencies to develop G.O.L.D. programs. Such programs should 1) ensure the wise use of resources at all state-owned facilities, 2) coordinate the State's Buy Recycled, Program at the agency level, 3) provide the highest levels of collection possible for recyclable materials at the agency level, 4) provide incentives and education needed to achieve maximum levels of waste reduction and recycling at state government facilities, and 5) increase communication between state employees, Washington state citizens, the Legislature, and local jurisdictions regarding waste reduction, recycling, and procurement actions.

These objectives, coupled with specific required plan elements, are addressed throughout the Ecology G.O.L.D. Plan in a way that allows other agencies to use this plan as a model for their plans. As written, it is readily adaptable to a variety of facility types.

To keep this plan simple and as easy to follow as possible, the objectives and required plan elements of the State G.O.L.D. Plan (stated herein in bold) have been reiterated and are followed by a description of our responses.

OBJECTIVE 1 - For all state government entities to develop a waste reduction, recycling, and procurement program for their facilities which incorporates the goals, objectives, and strategies defined by this plan and which is based on the results of waste stream evaluations conducted at their facilities.

REQUIRED PLAN ELEMENT 1.1: Identification of Program Coordinator and Task Force representatives policy stating commitment to waste reduction and recycling.

OUR RESPONSE: HOW ECOLOGY AGENCY G.O.L.D PLAN DEVELOPED

During January of 1992, Ecology G.O.L.D: Coordinator Marnie Black began putting together an in-house committee to develop the Ecology G.O.L.D. Plan. This committee represented several Ecology and different buildings and facilities. The G.O.L.D. Committee immediately began work on an in-house mission statement and, goals to achieve that mission. After the mission statement and goals were formally adopted by Ecology's In-House G.O.L.D. Committee, several subcommittees were organized to gather information needed for the Ecology G.O.L.D. Plan. Each subcommittee gathered information pertinent to a specific goal and assessed the existing conditions for compliance with the goal, and need for further actions. The goals address waste reduction, purchasing, collection, education, evaluation and tracking.

THE MISSION AND GOALS OF ECOLOGY'S G.O.L.D. PLAN

The mission of Ecology's G.O.L.D. Plan is to advocate strategies and policies that will minimize the waste of material, energy, and water resources at all Ecology facilities and in all of its operations. Ecology's program will provide a leadership model for state agencies and institutions, as well as for the general public.

The G.O.L.D. Committee developed goals for Ecology's program that will:

- Promote pollution prevention through annually reducing the solid and toxic/hazardous wastes generated at Ecology's facilities.
- Conserve natural resources and reduce environmental degradation by annually increasing the use of products that are reusable, recyclable, made with recovered materials, and are nontoxic, and by increasing the use of recycled paper and paper products at all state facilities by July 1, 1993, and annually thereafter.
- Meet or exceed state goals of 50 percent recycling to contribute to state efforts.

Our goals concerning waste reduction are to:

- Measure waste generation by weight per employee;
- Annually reduce our toxic and solid waste stream by weight per employee; and
- Set reduction rate goals per year.

Our goals affecting purchasing practices are to:

- Purchase and use only recycled and environmentally sound paper and paper products;
- Track purchases to find out what and how much is being purchased;
- Replace virgin-content products (all material types) with post consumer and recycled content products wherever possible and expedient;
- Reduce the amount of waste producing purchases, including purchase packaging, per employee, either by weight or volume, through promotion of waste reduction practices;
-

Replace disposable and single use products with durable products wherever possible;

- Reduce or eliminate purchases of toxic or hazardous substances wherever possible and expedient; and
- Promote waste reduction techniques and technologies.

Our goals concerning collection of recyclables are to:

- Track current collection systems to determine what materials are being collected for recycling and in what quantities;
- Develop a system that cost-effectively monitors collected weight of recyclables per employee; and
- Achieve 100 percent participation in collection programs by easing accessibility and increasing awareness of available collection opportunities.

Our goals concerning education are to:

- Initiate a model program to educate employees about energy and water conservation, and waste reduction and recycling practices and opportunities;
- Increase employee awareness of, and participation in, waste reduction and recycling practices and opportunities; and
- Enable Ecology employees to see themselves as leaders in waste reduction and recycling.

The G.O.L.D. Committee will develop a method to monitor the impacts of the new G.O.L.D. policies, programs, and cost/benefits. In addition, annual employee surveys will be used to evaluate the effectiveness of the G.O.L.D. Program's education component. The surveys will allow all employees to express their opinion about the program and will help us identify changing awareness and personal behavior in regard to waste reduction and recycling. To monitor and evaluate the effectiveness of the G.O.L.D. program we will:

- Survey employee attitudes, awareness and behavior with regard to waste reduction and recycling;
- Conduct a second waste audit one year from the G.O.L.D. Plan's effective date.

REQUIRED PLAN ELEMENT 1.2: Brief summary of the facility evaluation results.

OUR RESPONSE TO REQUIRED PLAN ELEMENT 1.2: WE CONDUCTED A WASTE AUDIT

ECOLOGY .WASTE AUDIT

An in-house agency waste audit was critical to evaluating specific parts of Ecology's material recovery system, for planning purposes and for targeting the part of the waste stream that could be reduced, reused, or recycled. Waste characterization or waste composition studies are used to develop an accurate picture of how much garbage is being generated and disposed, and what, materials are being discarded.

The waste audit that we conducted was not meant to be ,a statistically significant, scientific study. However, it was an important planning and educational tool for developing appropriate waste reduction and recycling programs, and will also provide a baseline for future evaluations of those programs. The results of the waste audit can be compared to other records kept by facility managers to determine if Ecology's waste disposal expenses have gone up or down in the past few years and what factors may be affecting cost fluctuations. Particularly, it should be noted whether cost differentials are due to changes in behavior (the reduction of volume) or a reflection of the collection cost increases beyond our control.

The waste audit included both desk-side audits and "dumpster and recycling collection bin dives" where the materials that were discarded for disposal and those that were set aside for collection were analyzed and measured directly. The waste stream for each facility was examined in light of what is typically true for the particular facility type, for what the waste audit revealed, and what on-site, walk-through assessments revealed. Baran Hall was used as Ecology's sample waste stream for the audit, and a detailed chart of the results of that audit can be found in Appendix A.

THE AUDIT RESULTS. Ecology's dumpster and collection bin dives were conducted April 18, 1992 at one typical office facility in Lacey, and we found several revealing pieces of information about our own waste stream. An Ecology employee typically generate. 3.32 pounds of waste per week. About 2.22 pounds of that waste, or 67%, is recycled through Ecology's recycling program, and the remaining waste is disposed of as garbage. The bulk of the material collected for recycling is white paper, much of which has only been used on one side. Mixed waste paper represents the next largest item collected, and a few non-recyclable pieces of paper were also found in this bin. Glass and metals were collected, but were picked up via a voluntary system rather than being items included on the collection contract.

In the dumpster outside, the single greatest component was non-recyclable waste paper, at 20%. Food waste was the second greatest component, representing almost 19% of the disposed waste. Recyclable mixed waste and cardboard represented 12.28% and 10.8% respectively, and aluminum cans represented .07% of the waste. So it seems that Ecology employees have made good progress but need to work toward recycling all items that are recyclable.

REQUIRED PLAN ELEMENT 1.3: A financial description of the plan and demonstration that any required funds will be incorporated into future budget requests and long-range business plans, and that the environmental benefits and cost savings resulting from the program will be tracked and documented.

OUR RESPONSE TO REQUIRED PLAN ELEMENT 1.3: WE DEVELOPED ACTION ITEMS

ACTION ITEMS AND FINANCIAL DESCRIPTION

In assessing the various facilities and waste streams, recommended actions for waste reduction (which often includes procurement actions) and recycling improvements were made by the reviewers and the staff that was interviewed (see discussion under Required Plan Element 2.1.). These action items, along with projected costs, are summarized below.

Staff time is only counted when extra, non-scheduled training or activities are required for those who do not have G.O.L.D. activities as part of their CO. When counted as an added expense, staff time is calculated based on an average FTE annual salary of \$35,000.00 (includes benefits). The average hourly rate figures out to \$21.04/hr. Printing and travel costs will be included in WRRLC's G.O.L.D. Program expenses.

ACTION ITEMS	Facility Type/Responsible Party	Cost/Benefit (PDS = Potential Disposal Savings)
WASTE REDUCTION/PROCUREMENT		
1. Adopt an employee waste reduction and recycling policy agency-wide (see Appendix C).	All\EMT	- 0 - (on-going) PDS
2. Acquaint Ecology procurement officers with the preferred packaging guidelines developed by the Washington Retail Association (see Guidelines, Appendix G).	All\Purchasing & Procurement	- 0 - (on-going training time)
3. Review copy machine repair and maintenance records for efficiencies of machine replacements.	Offices/Operations	-0 -(on-going)
4. Investigate installation of blow dryers in rest rooms. (Preferably the automatic touch response dryers.)	Bathrooms/ Operations - Facilities Planners (AR potential site?)	Unknown (new Building already costed in) PDS
5. Provide composting opportunities for all employees (see Composting Food Wastes, Appendix B).	Breakroom/ Facilities Coordinators	\$40.00 @ for box plus staff time, PDS
6. Investigate reusing or recycling uncontaminated waste basket liners and purchase coded, post consumer content garbage liners agency-wide.	Offices/ Operations - Facilities Planners	- 0 - (on-going) PDS
7. Check with Xerox to have our dry ink bottles refilled rather than recycled: they are made of #2 HDPE but are not recyclable due to the ink contamination.	Offices/ Operations - Facilities Planners	- 0 - PDS
8. Initiate a maintenance program for vehicle tires. All vehicle tires should be rotated regularly and checked for uneven wear and proper inflation.	State Vehicles/ Motor Pool	- 0 - PDS
9. Replace fire extinguishers containing halon, a highly toxic petroleum based product, with less toxic ABC fire extinguishers, which use a latex derivative.	All & State Vehicles/ Motor Pool	- 0 - (on-going over next two years)
10. Refill fire extinguishers rather than replace them when wherever cost effective.	All/Motor Pool	Staff time est. 10 hrs., PDS
11. Project the food waste stream for the new building and develop composting plans, including waste reduction strategies for food service, cooperative and environmentally sound procurement, service styles, and disposal options.	New Building/ Facilities Planners	One-time set up costs, est. 10 hrs. PDS
12. Conduct a cost/benefit analysis to determine if Ecology should buy a paper shredder to prepare own packing material from MWP and/or set up system to retrieve packing materials to the warehouse.	Warehouse/Facility Planners	Staff time - est. 40 hrs. PDS
13. Store records that need to be kept for extensive periods of time on micro fiche and/or film rather (or some other efficient information storage system) than on hard copies that need to be archived and warehoused. Cost/benefit analysis recommended.	Records Management	PDS and potential (storage) cost savings of thousands of dollars per year.

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14.	Utilize eMAIL to eliminate inter-office, memos when possible.	All	- 0 - (on-going) PpS
15.	Consolidate publication purchases through the Ecology Library or Resources Centers where they can be checked out or routed for distribution.	All	Education and staff time - est. 20 hrs. plus on-going, PD\$
16.	Avoid having Ecology publications prepared by the State Printer shrink-wrapped whenever possible. When unavoidable, make recycling options available (many Pay & Saves take this material).	All	- 0 - PM
17.	Replace all non-refillable pens and pencils (any that must be disposed after a single use).	All	Purchase cost savings PDS
18.	Procure durable coffee mugs, flatware, and service settings to replace disposable counterparts whatever cost efficient and/or possible.	All (done for new building)	- 0 - (on-going)
19.	Ensure methodologies used for the assessment of samples be periodically reassessed for pollution prevention opportunities.	All operating programs (EILS possible load)	Staff time - est. 16/hr/yr
20.	Procure recycled content paper and paper products exclusively. In addition, procure and/or request recycled paper and paper products that have not been bleached with chlorine or hypochlorite regularly, even if it is not available.	Procurement officers	- 0 - (on-going)
21.	Avoid using brightly colored, hard to de-ink, papers for office use and publications. Pastel colors are easier to de-ink and white paper has a significantly higher buy-back value.	All	- 0 - (on-going)
22.	Request vegetable-based inks when cost efficient; avoid requesting inks containing highly toxic or metallic materials.	A(I printing requests	- 0 - (on-going)
23.	Establish uniform procedures to better handle unnecessary printing, distribution and warehousing of brochures.	Publications	Staff time - 60-70 hrs., PDS
24.	Establish an information exchange system for used (warehoused) materials to promote both intra and interagency exchanges of materials. (Occasional articles in E.T.)	Support Services	- 0 - (ongoing)
25.	Familiarize purchasing coordinators with the recycled content items available in Central Store's catalog.	Purchasing Coordinators	- 0 - (ongoing)
26.	Investigate the availability of refillable plotter pens.	Purchasing Officers	- 0 - (on-going) PDS
27.	Check plotter paper to ensure we are buying post consumer content paper. Review performance specifications to determine if a bleached paper is required.	Purchasing Officers	- 0 - (ongoing)
28.	Ensure yard waste generated at the new building site is composted.	Facilities Management	- 0 (on-going) PDS

29.	Request G.A. provide language in their contracts that requires those who contract with the State to use products that are made with recycled materials, and that reduce environmental degradation.	Purchasing	Staff time - 20-30 hrs.
30.	Replace paper towels with sponges and durable wash cloths wherever possible.	All	- 0 - (on-going) PDS
31.	Limit purchases of vehicles with air conditioning.	Motor Pool	- 0 - (on-going)
COLLECTION/RECYCLING		FACILITY TYPE/RESPONSIBLE PARTY	COST AND/OR BENEFITS (PDS = Potential Disposal Savings)
32.	Investigate contracting for cans, glass and other recyclables (beyond paper).	Facilities Management	PDS, on-going operational, est. \$.05/sq.ft.
33.	Coordinate efforts to recycle things that have no value.	All/ Facility Coordinators	- 0 - (on-going) PDS
34.	Clean and recycle more containers in the Lab.	Labs/Lab Attendants	Unknown PDS
35.	Request a state contract be made available for laser cartridges and laser cartridge recharging.	All/Purchasing	Staff time, est. 2 hrs. Potential purchasing savings PDS
38.	Investigate the recycling opportunities for plastics and styrofoam.	G.O.L.D. Implementation Committee	PDS
37.	Request paper in recyclable ream wrappers. These are available from one of the two national ream wrapper manufacturers. (The recyclable wrappers are currently being used by James River.)	All	- 0 - (on-going) PDS
38.	Investigate expanding the Padilla Bay Reserve collection contracts to include items such as glass, oil, and tin.	Facilities Management/ Shorelands	Contract cost PDS
EDUCATION		RESPONSIBLE PARTY	COSTS
39.	Institute a G.O.L.D. Plan "column" in Ecology Today, featuring facts and personal testimonials or success stories from guest writers.	In-house G.O.L.D. Staff	- 0 - (on-going)
40.	Develop G.O.L.D. Plan "Fact", "Tip", and "Focus" sheets in easy-to-read, non-bureaucrat-ese, outlining the what, where, when, why and how of personnel participation.	Ecology G.O.L.D. Staff	- 0 - (on-going)
41.	"Institutionalize" the G.O.L.D. Plan participation by: a) Including the G.O.L.D. Plan in new employee orientations. b) Encouraging and or recognizing G.O.L.D. Plan participation during annual employee performance review and evaluations.	Personnel & Ecology G.O.L.D. Representative	- 0 - (on-going)

42.	Make periodic presentations to EPT/EMT regarding G.O.L.D. Plan implementation and performance updates.	Ecology G.O.L.D. Representative	- 0 - (ongoing)
43.	Create -an annual G.O.L.D. Plan awards/recognition ceremony, rewarding Individuals, programs of buildings for outstanding waste reduction or diversion successes. Create an "honor roll" for key staff.	Ecology G.O.L.D. Representative	\$100.00 per employee
44.	Develop a computer-based G.O.L.D. Plan "network" or bulletin board for sharing anecdotes, success stories or techniques between programs.	Information Systems Division	-0-
45.	Develop a coordinated training program for key personnel, creating "master reducers/recyclers" in each program, linking this group with solid waste G.O.L.D. Plan person at WRRLC.	Tenant Committee	Staff time - 20 staff for 4hrs.
46.	Conduct a travelling G.O.L.D. Plan "roadshow" comprised of key staff which would do periodic whistle-stop tours of the regions and buildings at headquarters to encourage support, solicit new ideas, and generate stories for marketing through the "success story" formula reference above.	G.O.L.D. Committee	staff time/travel expenses - unknown
47.	Create a campaign strategy and timeline for outreach to the national consumer, and special interest publications and radio TV broadcasters,	PIO for G.O.L.D. Program	Staff time - expenses unknown
48.	Survey employee attitudes, awareness and behavior in regard to waste reduction and recycling.	G.O.L.D. Committee	Staff time est. 10 hrs.
49.	Conduct a second waste audit one year from the G.O.L.D. Plan's effective date.	G.O.L.D. Committee	Staff time est. 30 hrs.

OBJECTIVE 2 - TO incorporate the wise use of natural resources and associated waste reduction actions into the daily operation of all state facilities.

REQUIRED PLAN ELEMENT 2.1: Description of procedures and policies which are already in place, or which will be instituted, to support source reduction of solid and hazardous materials.

OUR RESPONSE: WE REVIEWED OUR FACILITIES AND POLICIES

PART 1: FACILITY REVIEW

Ecology occupies several buildings for our headquarters staff and four regional offices. These buildings differ in the type of facilities and services available, the number of staff occupying them and the types of work that are performed there. In order to focus on the types of activities that create waste, and therefore be able to provide suggestions for improvement, the following areas were identified and reviewed for solid and hazardous waste reduction opportunities: office areas, the motor pool, copy centers, EILS stations, a cartography area, warehouses, food service area, Manchester Laboratory, and Padilla Bay Center.

The effectiveness of existing management and operating procedures varies from facility to facility and area to area. The specific areas reviewed represent only a small sampling, but do serve to indicate how we are doing in general and where we might make improvements.

Each facility type identified for Ecology is discussed below. A description of the components of the facility is given, as well as a brief overview of the facility's waste stream, collection program, purchasing practices and existing conditions. Action items are recommended at the end of each section. Naturally, not all offices, copy rooms, or warehouses were reviewed for this data. We have only taken representative samples.

Action items are also provided for activities that are beyond the control of each individual employee but need to be looked at by the agency. The costs that would be associated with the recommendations are found in the Introduction of this plan.

FACILITY TYPE: OFFICE AREAS

COMPONENTS: Offices, employee break rooms, office copy rooms and supply areas.

WASTE STREAMS: Over 70% of the solid waste that is generated by offices is recyclable paper and cardboard. Other common wastes are aluminum cans, glass and food waste.

COLLECTION: Ecology's waste audit, which targeted a typical office facility, found that employees are generating 3.32 pounds of waste each week. Approximately 2.22 pounds of the total generated, or 67%, is recycled. Recyclable items that are still being disposed include organic wastes, mixed waste paper, cardboard, plastics, glass and white office paper.

PROCUREMENT/PURCHASING: Facilities, supplies, services and equipment for Ecology offices are primarily provided through General Administration, State Printer and Information Services' contracts. However, Ecology has limited authority to buy supplies and services on conditional-use and convenience-use contracts. Ecology is presently working with various state purchasing authorities to review state contracts for inclusion of environmental criteria. As more environmentally sound products and services become available, Ecology will buy them, as will all agencies subject to purchasing from state mandatory contracts.

OVERVIEW: Ecology has 33 office locations and approximately 1600 employees around the state. Waste reduction and recycling opportunities and conditions vary widely, and the existing conditions listed here provide only general assessments.

EXISTING CONDITIONS:

Offices

1. Most office staff are separating paper out for reuse and recycling at or by their desks.
2. Employees have and want to keep their own garbage can for non-recyclable items for convenience. The plastic garbage can liners currently used are not coded for recycling purposes nor are they made with recycled content. They are typically used for one week and then replaced.
3. In some offices, an eMAIL system is in place for sending and receiving in-house messages.
4. Memos and reports are routed most of the time to prevent excess copies from being made. .
5. Currently, agencies are able to buy both recycled and non-recycled paper off of state contracts. About 75 % of Ecology's paper purchases are of recycled paper and 25% are virgin paper.
6. Refillable pens and pencils are being exclusively ordered by a few offices.
7. Plain-paper fax machines are being requested on new orders for fax machines.
8. Mastic glue, which is a latex derivative rather than the conventional petroleum-based glue, is being requested on new carpet installation contracts.
9. In a few facilities, light timers and dimmers are being installed.
10. Publications are often ordered by individual employees, rather than channeling all publication purchases through the library ordering system. Consequently, there are many duplicate copies of certain publications being ordered.

Employee break room

1. Unbleached, post consumer content paper towels are being requested for rest room and break room use. Some facilities are considering blow

dryers to further reduce their waste stream.

2. Reusable mugs are available for employees and guests in some areas; in other areas, paper cups and other disposable items are used.
3. A composting system is in place for the office surveyed for this plan. However, composting systems are typically not being used for Ecology offices. In the office that was reviewed, food wastes are collected in a small covered bucket in the break room and fed into a worm bin outside.
4. In some offices sponges and cloth towels are provided for clean-up as well as paper towels.
5. Permanent coffee filters are not typically being used, and none are available for common usage.
6. Janitorial services and supplies are frequently sub-contracted through General Administration.

Office copy and supply room

1. Office supplies and all other materials in the office areas are labeled to ensure proper storage and handling.
2. Routine procedures have been implemented to prevent spills and leaks when adding toner to copy machines.
3. Routine equipment maintenance schedules are set up for copy machines, but they often break down before the time set.
4. The following reuse strategies are in place for supplies found in- various offices:
 - a. File folders and other reusable supplies are stocked with the new supplies.
 - b. Only pens and pencils that are refillable are ordered.
 - c. Used, one-sided office paper is stocked next to printers and the copy machine to; facilitate reuse whenever possible.
 - d. One-sided paper unsuitable for printing or copy use is set aside for use as note pads and scratch paper. (Note: The state printer has requested that we DO NOT send used paper to the bindery to be made into pads because labels and staples on the used paper would ruin their expensive cutting equipment. Instead he will sell us the adhesive so we' an bind our own note pads in-house if so desire.)

- e. Documents are copied on both sides whenever possible.
 - f. Printer cartridges are recharged by General Administration's Office Support systems.
5. Recycling strategies in place include:
- a. Non-chlorinated and post consumer content paper and plastic products are routinely requested.

ACTION ITEMS:

Waste Reduction/Procurement

1. Copy machine repair and maintenance records need to be reviewed to see if it would be cost efficient to replace machines.
2. Installation of blow dryers in rest rooms should be investigated and promoted where possible.
3. All office buildings need a composting system in place for employees (See Appendix B).
4. Investigate a system for reusing or recycling uncontaminated waste
5. basket liners.
6. Check with Xerox to have our dry ink bottles refilled rather than recycled; they are made of #2 HDPE and are recyclable, but we do not have a collection system in place to collect plastics in our offices and the bottles would be difficult to clean.
7. Records Management recommends storing records that need to be kept for extensive periods of time on micro fiche, which is more economical as well (Ecology currently stores about 4,000 boxes of archived materials at 53.29/box/yr.).
8. Purchase coded, post consumer content garbage liners agency-wide. \$. Consolidate publication purchases through the Ecology "Library or Resource Centers where they can be checked out or reused for distribution.
- 9.

Avoid having Ecology publications prepared by the State Printer shrink-wrapped whenever possible. When unavoidable, make recycling options available.

10. Replace all non-refillable pens and pencils with refillable types.
11. Durable coffee mugs, flatware, and service settings to replace disposable counterparts wherever reasonable.
12. Sponges and durable wash cloths to replace paper towels in breakrooms wherever possible. ,

Collection/Recycling

1. The agency should consider contracting for recyclable pickup for aluminum cans, glass and other recyclables (beyond paper). The current recycling that occurs in most buildings is done by employees on their own time.
2. Coordinate effort to recycle things that have no value. (Similar to #1)
3. Need to clean and recycle more containers in the Lab.
4. Recycle the copier toner bottles.
5. Use recycled content paper and paper products exclusively. In addition, recycled paper and paper products that have not been bleached with chlorine or hypochlorite should be requested regularly, even if it is not available. Continuous requesting urges suppliers to stock the requested item.
6. Ecology employees should avoid the use of brightly colored, hard to de-ink, papers for office use and publications. Pastel colors are easier to de-ink.

FACILITY TYPE: MOTOR POOL

COMPONENTS: Parts cleaning and light maintenance, oil changing, materials storage.

WASTE STREAMS: Used oil, antifreeze, batteries, carburetor cleaner, degreasing and cleaning solvents, acid wastes, paint thinner, paint wastes, CFC's and tires.

COLLECTION: In addition to the office collection system, used oil is collected for rerefining.

PROCUREMENT/PURCHASING: Cars and equipment are bought off of General Administration's state contracts. Routine service and maintenance contracts as well as fire extinguisher contracts are handled through Motor Pool Services.

OVERVIEW: Motor pool services approximately 330 vehicles and is the only maintenance facility in Ecology. All regional use vehicles are maintained via service contracts.

EXISTING CONDITIONS:

1. Materials used in the motor pool area are labeled to ensure proper storage and handling.
NOTE: The new building will have a designated hazardous waste area, which will reduce the likelihood of spills and mishandling of hazardous materials. The new building will also have floors with no cracks so that spills can be contained, as well as a filterable sump pump to catch and recycle waste water and solvents.
2. Routine checks and procedures have been instituted to minimize spills and leaks.
3. Vehicles and equipment have routine maintenance schedules.
 - a. Routine oil changes are done every 4,000-5,000 miles.
 - b. Vehicles are properly tuned every 30,000 miles.
 - c. An annual emission test will be performed on vehicles wherever there are more than 20 vehicles in a pool.
 - d. Antifreeze is checked annually, but rarely changed. Coolant is checked for pH, contamination and coolant properties. Used antifreeze is recycled by a service agent:
4. Ecology's motor pool at present is exercising all practical means of recycling and waste reduction, including reuse strategies.
 - a. All used oil is recycled, as are used car batteries and other replacement-type parts.
 - b. The motor pool uses recycled oil for routine oil changes.
 - c. The shop uses a low emission 'solvent-like' solution for parts cleaning, that is less flammable than conventional solvent solutions.
 - d.

Rather than using paper products, a cleaning service provides shop rags and overall clothing.

- e. The Transportation Office is looking into the feasibility of Ecology using electric vehicles and/or natural gas powered vehicles.

Listed below are changes that have been made in Ecology's motor pool to replace, reduce, reuse, recycle and make more environmentally safe where circumstances have been identified as hazardous, disposable and nonrecyclable materials:

Oil - now able to purchase re-refined oil, available on state contract with a cost increase of six or seven cents per gallon.

Part cleaning solvent - now using an environmentally safer solvent that is less flammable, is less hazardous to the skin and less dangerous to breathe. There is also a cost savings of approximately \$30 every six weeks.

Antifreeze - now using a vendor that recycles antifreeze.

Air conditioner - now using a vendor that recycles the refrigerant used in the air conditioners.

Floor sweeping compound - testing various brands that are advertised as environmentally sound.

Water - now running vehicles through a commercial car wash instead of washing on-site. There is, therefore, a cost savings: the road debris does not have to be dealt with and the commercial car washes have the capability to recycle the water used.

Paper - now using fewer paper towels and rags by using shop rags and having them cleaned.

Ice removal - now using an environmentally safe chemical deicer in place of salt. We share the spreading equipment with city, county and other state agencies in place of purchasing our own.

Waste oil leaks - now have a container to collect leakage if the waste oil drum leaks.
Car batteries - looking for a container to store car batteries.

Tires - contract vendor, Goodyear, recycles our used tires in Winlock.

Vehicle oil filter - looking for an oil filter crusher.

Vehicle fluids - now being more aware of any vehicle fluid drips. Stopping them from continuing and caring for the "drippings" (antifreeze, oil, etc.) after they are on the ground.

Alternative fuel - much research has been done.

Compressed natural gas - there is a lack of fueling facilities.

Methanol - has adverse problems.

Propane - was looked at but fueling facilities are not available.

Electric - conversion kit for one of our vehicles has been ordered.

Vehicle flare storage - purchased old ammo boxes from State Surplus Property for sixty-five cents each and bolted them into the trunks of agency vehicles for flare storage. The boxes are air tight which gives the flares a longer usable life. The boxes will be transferred to the new vehicles.

Emission testing - obtained a used analyzer that allows motor pool to perform emission testing on Ecology vehicles. Although a vehicle may seem to be running without complaint, through testing, some vehicles do not meet the emission specifications and require repairs.

New vehicle purchases - more questions are being asked before approval is given to purchase a new vehicle.

ACTION ITEMS:

Waste Reduction/Procurement

1. Motor pool needs to initiate a maintenance program for vehicle tires. All vehicle tires should be rotated regularly and checked for uneven wear and proper inflation.
2. Present fire extinguishers containing halogen, a highly toxic petroleum-based product need to be replaced with less toxic ACE fire extinguishers, which use a latex derivative.
3. When cost-effective, fire extinguishers should be refilled rather than replaced.
4. Ecology should limit purchases of cars with air conditioning.

FACILITY TYPE: FOOD ICE AREA

COMPONENTS: Kitchen, food service area, storage, shipping and receiving.

WASTE STREAMS: Food waste, plastic utensils, cardboard, tin cans and product packaging.

OVERVIEW: Ecology does not lease any food service areas at this time. Most food waste streams are generated in employee break rooms and individual offices and can be handled easily with worm bin composting systems. Plans for handling this particular waste stream in the new building include providing sufficient service areas for recycling and composting. Other management systems for specific operations unique to this facility have yet to be developed.

ACTION ITEMS:

Waste Reduction/Procurement

1. Project the food waste stream for the new building and develop composting plans.
2. Waste reduction strategies for food service, including cooperative and environmentally sound procurement, service styles, and disposal options should be researched and recommendations should be made for moving into the new building.

FACILITY TYPE: MANCHESTER, LABORATORY

COMPONENTS: The Manchester Laboratory is an EPA-owned facility that is jointly operated by both EPA and Ecology, located near Port Orchard, Washington, on Puget Sound. The lab houses 31 Ecology employees. It includes one large laboratory building, a connected small office building and a bioassessment lab. EPA is responsible for overall facility operation including waste management.

WASTE STREAMS: There are 55 to 60 different waste streams, including some hazardous wastes. These wastes primarily consist of spent solvents, acids, bases, toxic solutions (metals, organics), samples, discarded commercial products and solvents evaporated into the air. There is a conventional office waste stream as well.

COLLECTION: EPA provides collection services through a janitorial contract. Office paper, cardboard, aluminum cans and polystyrene packing materials are collected for recycling. No chemicals or solvents are collected for recycling at this time due to the difficulties they have had finding reputable recyclers and the liabilities associated with improper handling. Any recycling contractor for the lab would have to meet EPA offsite policy requirements and undergo the scrutiny of an on-site visit to ensure

recycling processes are being conducted properly. A Continuous Extractor/Jacketed Concentrator has been recently purchased for recovery of evaporated methylene chloride. A Zxmark Evap Station was also purchased for evaporated solvent recovery.

Aluminum cans, paper, cardboard, styrofoam packing material, and waste oil are collected for recycling processors.

PROCUREMENT/PURCHASING: The chemicals used in the lab are purchased off of Washington State and EPA contracts. A common file for Manufacturer's Statement Data Sheets (MSDS) is kept and reviewed before new supplies are ordered to avoid excess orders. Only small quantities are ordered at any one time to avoid waste.

OVERVIEW: The Manchester Laboratory provides a wide range of chemical and biological analysis, including tests for metals, organics, general inorganics and bioassays. The laboratory receives samples from Air, Solid and Hazardous Waste, Toxics Cleanup Program, Water Resources, Shorelands and Water Quality programs. The lab is staffed by personnel from EPA, Ecology, and an EPA contractor. Ecology and EPA coordinate responses to waste issues.

EXISTING CONDITIONS:

1. Analysis methods are specified. Sample volumes, reagents used, and procedures followed cannot be varied if results are to be certified as "per method SW 846, Manual of Methods for QA/QC Sampling, Chapter 9. This limits the ability of the lab to use smaller volumes or less toxic reagents. This means that there will be toxics such as chlorinated solvents, chromium VI, and mercury in the wastes.
2. Waste reduction and pollution prevention plans were started in 1987, but are not yet completed. However, in 1988, the laboratory issued a Manchester Laboratory Disposal Manual that addresses waste minimization (Chapter IV-10). The Chapter describes the lab purchasing strategy and the chemical inventory system, recommends handling procedures for empty containers and unusable chemicals, and encourages the use of micro techniques and a re-evaluation of existing methods to encourage a reduction of dangerous waste generated by analytical processes (e.g. COD and TOC analysis).
3. Several of the analytical methods used at Manchester involve the use of solvents, including; freon, hexane, methylene chloride, and ethyl ether. There are significant opportunities to implement recycling/recovery/reuse programs at the lab. EPA and Ecology managers installed manifolds that recover solvent that is being evaporated during analytical methods. The solvents are not yet recycled off-site. When a suitable contractor is

found to recycle these solvents, it is estimated that the lab could meet the 50% waste emissions reduction goal.

4. 60 Fact Sheets have been completed on all of the waste streams generated as a result of sample analysis and bioassay testing. About 25 of these waste streams generated dangerous waste. Waste disposal facilities accept the Fact Sheets when approving waste for shipment to their facilities.
5. Several methods (COD, salinity) that produced hazardous wastes have been dropped.
6. An in-house generated computer program is used to flag samples that exceed hazardous waste designation levels, to ensure proper disposal.
7. Total Quality Management (TQM) principles and practices have been in use for two years. The goal is to enable continuous reduction of rework, which means re-extraction and re-analysis. Both of these procedures can contribute to waste generation in the lab.
8. During 1991 and 1992, lab staff have been investigating the use of supercritical fluid extraction (SFE), which promises to greatly reduce the use of solvents in organics extractions.
9. EPA has installed a new 10,000 gallon underground fuel oil tank, with leak detection and monitoring instruments, to replace an aging tank without the required monitoring devices.
10. A chemical inventory has been performed and a chemical inventory system has been established at the laboratory. Chemists are allowed to order chemicals in the smallest quantities necessary to do their work, and chemical purchases are processed through a central ordering point to avoid duplicative ordering.

ACTION ITEMS:

Waste Reduction/Procurement

1. Methodologies used for the analysis of samples shall be reassessed for pollution prevention opportunities. Many of the methodologies were developed years ago when lab waste streams were not a consideration in determining analytical processes. Such reassessments could potentially save both purchasing and disposal costs. For example, if 100 milliliters of acetone could be substituted for two liters of methylene chloride, considerable disposal costs could be avoided.
- 2.

A waste exchange program with complimentary facilities shall be investigated.

3. The waste reduction and pollution prevention plan should be completed.

FACILITY TYPE: THE ENVIRONMENTAL INVESTIGATION LABS

COMPONENTS: The Environmental Investigation Laboratory Services (EILSI Program operates two lab stations in the Olympia/Tumwater area: the Benthic Lab on Capital Boulevard and a mini-dissolved oxygen (D.O.) lab located behind the Southwest Regional Office in the boat shed.

WASTE STREAMS: In addition to the conventional office waste stream, the labs generate waste acids, solvents, and spent solutions.

COLLECTION: Acetone, methanol and methylene chloride are collected and recycled.

PROCUREMENT/PURCHASING: Staff do most of their own ordering; however, all chemical purchases must be approved by the section supervisor and the chemical hygiene officer. A detailed breakdown of chemicals purchased can be found under REQUIRED PLAN ELEMENT 2.2.

OVERVIEW: Approximately twenty Ecology staff share the use of the EILS labs. The Benthic Lab has 4 - 5 permanent staff and is used primarily for sediment testing. The D.O. lab is used for testing samples of water for dissolved oxygen levels and does not house permanent staff. It is used on an as needed basis.

EXISTING CONDITIONS: The following is a list of the estimated chemical waste generated annually and the disposal method used. All items are disposed according to regulations. (This does not include Manchester Lab.)

Acetone	13 liters	recycled into fuel
Methanol	16 liters	recycled into fuel
Methylene chloride	8 liters	recycled
Hydrochloric acid	2 liters	neutralized, and down drain to
WWTP		
Nitric acid	2 liters	diluted, and down drain to WWTP
Sulfuric acid	5 liters	diluted, and down drain to WWTP
Alkaline iodide-azide	5 liters	diluted, and down drain to WWTP
pH buffer solutions	5 liters	diluted, and down drain to WWTP
Formaldehyde, 10%	625 liters	incinerated .
Manganese sulfate sol.	5 liters	diluted, and down drain to WWTP
Sodium thiosulfate 025 N	25 liters	diluted, down drain to WWTP

ACTION ITEMS:

Waste Reduction/Procurement

1. Sample assessment methodologies need to be reviewed and revised to consider pollution prevention criteria. It is hoped that some procedures involving toxic chemicals may be changed so that less toxic chemicals. can be used.

FACILITY TYPE: COPY CENTERS

COMPONENTS: Printing presses, xerographic equipment, plate makers and collators.

WASTE STREAMS: - Spent inks, solvents, ream wrappers, paper, plastic strips for wrappers and printing plates.

COLLECTION: White and mixed waste paper, solvents and inks.

PROCUREMENT/PURCHASING: The State Printer operates all of the state copy centers and supplies paper, inks, and other materials. Since about 95% of the Printer's inventory is post consumer content paper, recycled paper is commonly used in the copy centers.

OVERVIEW: Ecology has a copy center at its Headquarters location and access to 12 additional copy centers for copying, printing, stuffing and mailing documents. There are 16 copy centers altogether, and all except four are small areas (e.g. Copy Center 6 - Sawyer Hall Annex is 20' x 24') with one or at most two employees. The centers commonly have a xerox machine or a printing press plus a collator and/or a plate maker.

EXISTING CONDITIONS: Conditions vary from center to center, but in general,

1. Solvents are sent to the State Printer for recycling.
2. Some ream wrappers cannot be recycled and are a significant portion of the waste stream.
3. Printing plates have chemicals on them so they cannot be recycled.
- 4.

- Plastic strips on wrappers are not recycled.
5. Some petroleum-based inks are still used.

ACTION ITEMS;

Waste Reduction/Procurement

1. Vegetable-based inks should be routinely requested; inks containing highly toxic or metallic materials should be avoided.

Collection/Recycling

2. Recyclable ream wrappers should be used. These are available from one of the two national ream wrapper manufacturers.
3. The resin type of the plastic strips on paper reams should be investigated for recyclability. Possibly the supplier could take them back.

FACILITY TYPE: WAREHOUSES

COMPONENTS: Offices, break rooms, restrooms, and a warehouse area.

WASTE STREAMS: Cardboard, packing material, paper, over-issue/outdated books, aluminum, pallets, shrink wrap and glass.

COLLECTION: A collection contract for cardboard, packing material, and paper is in place, but aluminum and glass are collected and recycled by staff on their own time.

PROCUREMENT/PURCHASING: 90 - 95% of our supplies are purchased from Central Stores. However, Ecology warehouses receive all Ecology purchasing deliveries whether they come from Central Stores or not.

OVERVIEW: There are two Ecology warehouses in the Capitol metropolitan area, one in Tumwater and one in Lacey. In addition, each regional office has its own "warehouse" area, but they are generally quite small by comparison. The Tumwater warehouse, the largest facility, has approximately 19,000 square feet and house., four employees.

EXISTING CONDITIONS: All items in the distribution center are purchased through Central Stores. Ecology must continue to work with. Central Stores to be able to obtain supplies made from recycled products.

- 1.

Stock replacements are made as recycled content items become available. The following recycled items are now being stocked in the warehouse:

- Adding machine tape
- Binder, 3-ring in various sizes and styles
- Double pocket portfolio in various colors
- Easel pads
- Envelopes in various sizes and styles
- File pockets, expanding, legal and letter size
- Folder, file in various sizes and styles
- Letterhead stationery
- Pad holder, with ruled pad
- Pad, writing
- Paper, xerographic in various sizes and styles
- Post-it notes in various sizes
- Report cover in various sizes, styles and colors
- Table, writing, ruled, white paper in legal and letter size

2. Many publications that are not needed are stored in the warehouse.
3. Pallets are reused as much as possible. Old ones are set out as firewood.
4. Shrink wrap is not recycled, though it could be.

ACTION ITEMS:

Waste Reduction/Procurement

1. A uniform procedure should be established to better handle unnecessary printing of brochures.
2. An information exchange system for used (warehoused) materials should be established and interagency communications for the exchange of materials should be promoted. (Occasional articles in E.T.)
3. Purchasing Coordinators should familiarize themselves with the recycled content items available in Central Store's catalog and other catalogs they order from.
4. The cost effectiveness of ordering a shredder to make packing material out of mixed waste paper should be investigated. There is a need for more packing material, and in some parts of the state mixed waste paper is not recyclable.

Collection/Recycling

1. A way to recycle the shrink wrap should be investigated. (Boeing recycles this material, maybe we could contact their processor.)

FACILITY TYPE: CARTOGRAPHIC SERVICE CENTER

COMPONENTS: The Center is 1 large room with 3 Graphic Information System stations, 1 word station, 2 light tables, and 1 drafting table.

WASTE STREAMS: Office and mapping paper, foam-filled poster board, cardboard, film and plotter pens (the pens are plastic and metal and filled with water soluble ink).

COLLECTION: The Center participates in the collection system provided by Baran Hall. Negatives are taken to the Department of Transportation where they recycle the silver, and the plotter pens are nonrecyclable.

PROCUREMENT/PURCHASING: The Center is supplied by the Water Resources and Shorelands Programs.

OVERVIEW: This unit provides graphic and cartographic services and houses Geographic Information System. There are two plotters stationed at the Center, but the stations and tables are open for use by other Ecology employees.

EXISTING CONDITIONS: The plotter paper is reused for practice .runs on raps and plots.

ACTION ITEMS:

Waste Reduction/Procurement

1. The availability of refillable plotter pens should be investigated.
2. Plotter paper should be checked to ensure we are buying .post consumer content paper and performance specifications should be reviewed to determine if a bleached paper is required.

FACILITY TYPE PADILLA BAY NATIONAL ESTUARINE RESERVE

COMPONENTS: The reserve covers about 12,000 sq. ft. and includes a house., a barn, a Center with four office areas, an estuary and 12-14 boats.

WASTE STREAMS: White and colored paper, aluminum, batteries, oil, tin and cardboard.

COLLECTION: Paper, aluminum and batteries are collected for recycling.

PROCUREMENT/PURCHASING: Shorelands manages the Center.

OVERVIEW: There are four to five permanent staff, two -Washington Conservation Corps staff and varying numbers of graduate students. The Center services 25,000 to 30,000 visitors per year.

EXISTING CONDITIONS: The Center offers visitors only aluminum can recycling.

ACTION ITEMS:

Recycling

1. The Padilla Bay Reserve should consider expanding their collection contracts to include collection of items such as glass, oil, and tin.

ECOLOGY'S NEW HEADQUARTERS BUILDING

COLLECTION: Outside, the new Ecology building will have seven two-yd. dumpsters for recycled materials and 1 dumpster for trash. Inside, the new building will have 20 recycling stations. There will be 7 barrels per station, 2 for paper and 5 for other materials.

PROCUREMENT/PURCHASING: Reusable service and utensils will be provided in the new building.

ACTION ITEMS:

Waste Reduction/Procurement

1. The food waste stream for the new building should be projected and composting plans should be developed.
2. Waste reduction strategies for food service, including cooperative and environmentally sound procurement, service styles, and disposal options should be researched and recommendations should be made for moving into the new building.
3. The yard waste generated at the new building site should be composted on-site. A G.O.L.D. sub-committee is looking into this.

PART 2: REVIEW OF ECOLOGY'S MANDATES, MISSION AND POLICIES CONCERNING WASTE REDUCTION AND RECYCLING

LEGISLATIVE MANDATES: Waste reduction represents Ecology's foremost waste management strategy and means "reducing the amount or toxicity of waste generated or reusing materials " (RCW 70.95.030(201)). The Department of Ecology's mission and goals promote waste reduction through conservation and preventative measures, as do several specific policies. For the most part, however, Ecology's policies relate to outreach directives, rather than in-house operating procedures. Ecology's G.O.L.D. Plan will address housekeeping policies and ensure that our in-house operating practices coincide with our overall mission and outreach emphasis.

Chapter 70.950 RCW directs state agencies to:

undertake an aggressive program designed to reduce and recycle solid and hazardous wastes produced in the operation of state buildings and facilities to the maximum extent possible.

Pursuant to Chapter 43.19 RCW, it shall be the policy of the Department to purchase recyclable products whenever possible. In addition, in accord with RCW 43.19.538, the Department shall purchase products containing post-consumer recovered) material whenever feasible and whenever the cost of such product does not exceed 110% of the cost of a similar product containing no post-consumer material.

Executive Order 90-06 Section 4 states:

It shall be the policy of all executive Branch agencies to purchase quality products whenever economically feasible that are durable, made of recycled " and recyclable materials and that are non-toxic. These purchases will be made to the maximum extent possible while abiding by the rules and regulations of the Department of General Administration's Office of State Procurement.

ECOLOGY'S MISSION: Ecology's mission is to:

... protect, preserve and enhance Washington's environment and promote the wise management of our air, land and water for the benefit of current and future generations.

To accomplish the waste reduction and recycling component of this mission, Ecology will:

1.

- Provide employees with necessary support, training and professional development;
2. Promote prevention and conservation as the most effective ways to preserve our natural resources and protect the environment;
 3. Provide public education programs to promote wise use of our natural resources and encourage environmental protection; and
 4. Help other state agencies set an example in environmental protection.

Ecology's mission and the above goal statements generally reflect specific program mandates and outreach policies rather than in-house operations. This section will offer a review of current in-house policies and operations that contribute to waste reduction efforts.

ECOLOGY POLICIES: Ecology policies concerning operating procedures are generally distributed in written administrative policies, but on occasion will be disseminated via intra-agency memos. The following is a summary of all written policies that contribute to waste reduction efforts currently directing Ecology's day-to-day operations. Copies of the policies can be found in Appendix C.

Reissuance of Excess and Used Office Supplies

Effective 2/11/92

A memo to EPT from Bill Wheeler stated that the Department of Ecology distribution warehouse will accept and reissue excess and used office supplies. The reissuance represents an opportunity to preserve some state funds and to limit resource consumption.

Administrative Policy 8-19: Purchasing and Using Environmentally Sound Paper Products

Effective 1/7/92

This policy applies to the purchase of paper, paper products or printed materials, and promotes procurement of products that contain the maximum amount of post consumer and recovered materials available and whose virgin fibers have not been bleached with chlorine gas or hypochlorite. The policy directs Ecology employees to routinely request environmentally sound paper and paper products when the price of such products is not more than ten percent greater than the conventional counterparts.

Administrative Policy 5-41 : Establishing Innovative Work Schedule Options (Flextime)

Effective 2/1/92

One objective of this policy is to reduce peak hour travel as well as total travel

to work, resulting in energy savings. This policy applies whenever any employee requests to work an Innovative work schedule so long as the proposed schedule is in compliance with the Merit System Rules, the federal Fair Labor Standards Act, job requirements and the need to maintain services during office hours.

The Department of Ecology will promote and encourage the purchase of environmentally friendly products through the Purchasing Policy (8-0;2, #20, I:3- J) Administrative Task i8-D2 0'l Ai, and the effective training of purchasing coordinators throughout Ecology. Information about such items comes from various sources, but primarily from staff that use the products.

Current Examples

Paper: There has -been a very dynamic paper market in the past fear years. The Washington State Printer and Ecology have been in the forefront in testing, evaluating and using the environmentally improved paper as it becomes available. 'The State Printer stocks the highest content post-consumer recycled paper for immediate use by Ecology since our .request was male four years ago.

The current standard for Ecology copier paper exceeds EPA specification requirements and is manufactured especially to run in Xerox copiers. This paper Is 80recycled content with 10% post-consumer waste fiber.

Other: The Department of Ecology currently utilizes Janitorial, vehicle and grounds maintenance contracts. As part of our contract, Ecology requires the use of bulk products and recycled materials such as towels and tissues. For , grounds maintenance, we require the use of natural fertilizers and products that are environmentally sound. In our vehicle maintenance program, we recycle oil -acrd recapture cleaning solvents.

ACTION ITEMS:

Waste Reduction/Procurement

1. An employee waste reduction and recycling policy should be adopted agency-wide. A policy directing employees to minimize the waste of material, energy, and water resources at all facilities and in all operations has been developed and is being implemented as a pilot program in WRRLC to test its effectiveness and feasibility. The policy ?directs employees to request environmentally sound products, to conserve paper and other operating supplies., and to participate in office recycling and composting programs. A copy of the policy can be found in Appendix D.
- 2.

In accordance with the intent of the above procurement policies which promote waste reduction and recycling, Ecology procurement officers should be acquainted with the preferred packaging guidelines developed by the Washington Retail Association.

REQUIRED PLAN ELEMENT 2.2: A list of products that will, whenever, possible, be replaced by nontoxic, durable, or recyclable items.

OUR RESPONSE:

Many hazardous and toxic materials used by Ecology for testing and sampling cannot be replaced because testing and sample assessment methodology is prescribed by regulations. The following is a list of the toxic and hazardous materials to be used in Ecology's new building.

HAZARDOUS MATERIALS

Allowable Quantities for the New Building¹
5/1 /S2

LAB USAGE

1. CLEAN AREA - USE, H7 OCCUPANCY (DUE TA HIGHLY TOXIC OVER ALLOWABLE QUANTITY)

<u>PROGRAM</u>	<u>TYPE</u>	<u>MATERIALS BREAKDOWN</u>	<u>PROPOSE QUANTITY SUBTOTAL</u>	<u>ALLOWABLE QUANTITY</u>
EILS	1.1 - II	Orion Application Solution	2L (.5 gal)	240 gal
ELLS	3.3 - IA	Pentane	8L (2 gal)	60 gal
EILS 3.3 - I.B		Acetone 10L		
		Ethyl Alcohol, Anhydrous 4L		
		Ethyl Alcohol 70% 40L		
		Hexanes 8L		
		Isopropyl Alcohol 40L		
		Methyl Alcohol 40L 142L (37.5 gal) 120 gal		
EILS.	4.3 - 2	Nitric Acid	4L (10.5 lbs)	500 lbs

¹1991 UBC Chapter 9

<u>PROGRAM</u>	<u>TYPE</u>	<u>MATERIALS BREAKDOWN</u>	<u>PROPOSE QUANTITY SUBTOTAL</u>	<u>ALLOWABLE QUANTITY</u>
EILS	Corrosive	Alkaline Iodide, Sodium Azide 6L Hydrochloric Acid Concent. 4L Intracid Rhodamine Wt. Liquid 40L Nitric Acid 4L Orion Application Solution 2L Sodium Hydroxide Solution 4L Sodium Hydroxide Pellets 10006 Sulfuric Acid 98% 5L Sulfuric Acid 25% 5L Sodium Azide 5KG Solid	Liquid 70L (18.5 gal) 6KG (13.3 lbs) 1	1,000 gal 0,000 lbs
EILS	Highly Toxic	Alkaline Iodide Sodium Azide 6L Sodium Azide, 2% & NACL, 4% 40L Sodium Azide 5 KG	Liquid 46L (120 lbs) Solid 5KG (11 lbs)	2 lbs 2 lbs
EILS	OHH	Formaldehyde 4% 40L Formaldehyde 37% 40L Methylene Chloride 10L	90L (24 gal)	1,000 gal
EILS	Toxic	DPD Tablets, #1 R&3 5,000 each Buffer Solution (ph 4,7, & 10) 100L Potassium Blidate 4L	Liquid 104L (274 lbs) 5,000 tablets	1,000 lbs 1,000 lbs
	Non-Hazardous	Manganese Sulfate Solution 12L Sodium Thio Sulfate 6L Potassium Chloride 10 ohms 10L Potassium Chloride 100 ohms 10L Potassium Chloride 1,000 ohms 5L Sodium Chloride 10KG Starch 2006		Not Restricted

2. WET AREA - USE, H7 OCCUPANCY (DUE TO HIGHLY TOXIC/OVER ALLOWABLE QUANTITY)

<u>PROGRAM</u>	<u>TYPE</u>	<u>MATERIALS BREAKDOWN</u>	<u>PROPOSE QUANTITY SUBTOTAL</u>	<u>ALLOWABLE QUANTITY</u>
EILS	1.1, II	Orion Application Solu. (TIBAB)	2L 2L (.5 gal)	240 gal
Air Quality	3.3, I-BA	Acetone 1 quart Methanol 1 quart Soda Lime 5 lbs	2 qts + 5 lbs	120 gal
EILS	4.3, 2	Nitric Acid 4L	4L (10.5 lbs)	500 lbs
Air Quality/ EILS	Corrosive	Alkaline Iodide, Sodium Azide 6L Hydrochloric Acid, Concen. 4L Intraud Rhodamine Solution 40L Orion Application Solution 21. Nitric Acid 4L Sodium Azide 5KG Soda Lime -5 lbs Sodium Hydroxide (Pellets) 100OG Sodium Hydroxide Solution 41. Sulfuric Acid 98% 5L Sulfuric Acid 25% 5L	Liquid 70L (18.5 gal) Solid 18.8 lbs	1,000 gal 10,000 lbs
EIL	Highly Toxic	Alkaline Iodide, Sodium Azide BL Sodium Aide 5KG Sodium Aide 2% NaCL 4'% 40L	Liquid 46L (12 gal) Solid BKG (11 lbs)	2 lbs 2 lbs
EILS	OHM	Formaldehyde 4% 40L Formaldehyde 37% 40L	80L	1,000 gal

<u>PROGRAM</u>	<u>TYPE</u>	<u>MATERIALS BREAKDOWN</u>	<u>PROPOSE QUANTITY SUBTOTAL</u>	<u>ALLOWABLE QUANTITY</u>
EILS	Toxics	Buffer Solution 100L		
		DPD Tablets, #1R & 3 5,000 Pellets	104L	1,000 lbs
		Potassium Blidate 4L	5,000 tablets	1,000 lbs
	Non-Hazards	See room #1, same gases and quantities as room #1		Not Restricted

3. QUALITY ASSURANCE

<u>PROGRAM</u>	<u>TYPE</u>	<u>MATERIALS BREAKDOWN</u>	<u>PROPOSE QUANTITY SUBTOTAL</u>	<u>ALLOWABLE QUANTITY</u>
	Non-Hazardous	Air Nitrogen Oxide, 25 PPM, Sp cu ft Sulfur Dioxide, 5 PPM, SC cu ft Carbon monoxide, nonflammable 150 cu ft		

*1 50 cu ft of propane proposed is not allowed in building except within approved piped delivery system.

4. HIGH SENSITIVITY AREA

<u>PROGRAM</u>	<u>TYPE</u>	<u>MATERIALS BREAKDOWN</u>	<u>PROPOSE QUANTITY SUBTOTAL</u>	<u>ALLOWABLE QUANTITY</u>
	Non-Hazardous	Air Nitrogen Oxide, 2PPM, \$C cu Sulfur Dioxide, 5 PPM, SC cu ft Carbon monoxide, nonflammable 150 cu ft		Not Restricted

* 150 cu ft of propane proposed is not allowed in building except within approved piped delivery system.

5. CHEM/SOILS SAMPLES - USE H7 OCCUPANCY (DUE TO HIGHLY TOXIC OVER/ALLOWABLE QUANTITY)

<u>PROGRAM</u>	<u>TYPE</u>	<u>MATERIALS BREAKDOWN</u>	<u>PROPOSE QUANTITY SUBTOTAL</u>	<u>ALLOWABLE QUANTITY</u>
Water Resources	3.1	Iron Powder 100g	100 g (.2 Ibs)	50 Ibs
Water Resources	4.3, 1	Silver Nitrate 113 g	113g (.25 Ibs)	12,000 Ibs
Water Resources	Highly Toxic	Silver Nitrate 113 g	113g (.25 Ibs)	2 Ibs
	Non-Hazardous	Calcium Carbonate Phenol Red Indicator	113 g 5 g	Not Restricted

6. TEMP CONTROL AREA

<u>PROGRAM</u>	<u>TYPE</u>	<u>MATERIALS BREAKDOWN</u>	<u>PROPOSE QUANTITY SUBTOTAL</u>	<u>ALLOWABLE QUANTITY</u>
	Non-Hazardous	Air Nitrogen Oxide, 25 PPM, 80 cu ft Sulfur Dioxide, 5 PPM, 80 cu ft Carbon monoxide, nonflammable 150 cu ft		Not Restricted

* 150 cu ft of propane proposed is not allowed in building except within approved piped delivery system.

7. SOUND PROOF ROOM

<u>PROGRAM</u>	<u>TYPE</u>	<u>MATERIALS BREAKDOWN</u>	<u>PROPOSE QUANTITY SUBTOTAL</u>	<u>ALLOWABLE QUANTITY</u>
	Non-Hazardous	Air Nitrogen Oxide, 25 PPM, 80 cu ft Sulfur Dioxide, 5 PPM, 80 cu ft Carbon monoxide, nonflammable 150 cu ft		Not Restricted

* 150 cu ft of propane proposed is not allowed in building except within approved piped delivery system.

8. TOOL ROOM

NO HAZARDOUS MATERIAL USE PROPOSED
NOTE: MATERIALS FOR TOXICS CLEANUP PROGRAM
ARE IN ADDITION TO THOSE LISTED IN DOC #7097
PER DOC #050237
OASES LISTED FOR TOXICS CLEANUP ARE CONSIDERED
INERT

9. & 10. ELECTRONIC EQUIPMENT CALIBRATION - USE, H7 OCCUPANCY (DUE TO HIGHLY TOXIC/OVER ALLOWABLE QUANTITY)

<u>PROGRAM</u>	<u>TYPE</u>	<u>MATERIALS BREAKDOWN</u>	<u>PROPOSE QUANTITY SUBTOTAL</u>	<u>ALLOWABLE QUANTITY</u>
EILS	1.1 - II	Orion Application Solution	2.75L (.5 gal)	240 gal
Toxics	3.3 - IB	Xylenes 250mL Cyclohexane 250mL Amylacetate 250mL		
EILS	Corrosive	Intracid Rhodamine Solution 40L Orion Application Solution 2L Platinum Black Plating 1L Sodium Hydroxide Solution 4L	47L (12.4 gal)	1,000 gal
EILS/Toxics	OHH	Methylene Chloride 250mL Platinum Black Plating Solution 1 L Trichloroethane 250mL	1.5L (.33 gal)	1,000 gal
EILS	Toxic	Buffer Solution (ph 4,7,10) 100L DPD Tablets, #1R&3 5,000 Pellets	Liquid 100L Solid 5,000 tablets	1,000 gal 1,000 lbs
Toxics Cleanup	3.2	Hydrogen 80 cu ft	80 cu ft	750 cu ft
Toxics Cleanup 3.3 - 1 B		Acetone 250mL Isopropyl Alcohol 250mL Hexanes 250mL Methanol 250mL	1L (.26 gal)	120 gal

11. HAZARDOUS MATERIAL STORAGE ROOM - STORAGE (6)

<u>TYPE</u>	<u>CLASS</u>	<u>2 ALLOWABLE QUANTITY</u>	<u>1 PROPOSED QUANTITY</u>	<u>ALLOW. QUANTITIES IF IN APPROVED STORAGE CABINET</u>
1.1 Combust. Liquid	II	240 gal	.53 gal	360 gal
1.1 Combust. Liquid	IIIA	660 gal	10.6 gal	990 gal
1.1 Combust. Liquid	IIIB	13,200 gal	N/A	26,400 gal
3.1 Flammable Solid	-	50 lbs	.2 lbs 7	5 lbs
3.3 Flammable Liquid	IA	60 gal	5.3 gal	90 gal
3.3 Flammable Liquid	IB	120 gal	87.6 gal	180 gal
4.3 Oxidizer	2	500 lbs	7.3 gal (73 lbs)	750 lbs
4.3 Oxidizer	1	2,000 lbs	4 gal (40 lbs)	3,000 lbs
7.1 Water Reactive	2	100 lbs	53 lbs	150 lbs
7.1 Water Reactive	1	250 lbs	55.2 lbs	375 lbs
Corrosive (Liquid)	-	1,000 gal	15.8 gal	1,500 gal
(Solid)	-	10,000 lbs	7.2 lbs	15,000lbs
Highly Toxic	-	40 cu ft	0	-
Sensitizer	-	10,000 lbs	6 oz	15,000 lbs
Other Health Hazard	-	1,000 gal	89 gal	1, 500 gal
Toxics	-	1,000 lbs	(5) 367 lbs & N/A	1,500 lbs

12. TANK STORAGE - STORAGE (6)

<u>TYPE</u>	<u>CLASS</u>	2 <u>ALLOWABLE QUANTITY</u>	1 <u>PROPOSED QUANTITY</u>	ALLOW. QUANTITIES IF IN APPROVED <u>STORAGE CABINET</u>
3.2 Flammable Gas		1,500 cu ft	3,005 cu ft	2,250 cu ft
Corrosive		1,300 cu ft	0 cu ft	1,950 Cu ft
Oxidizer		3,000 cu ft	0	4,500 cu ft
Highly Toxic (Liquid)		2 lbs	140L (369 lbs)	3 lbs
(Solid)		2 lbs	5.1 kg (11.3 lbs)	3 lbs
Toxic		1,300 cu ft	0 cu ft	1,950 cu ft
Other Health Heard		1;300 cu ft	0 cu ft	1,950 cu ft

*UPDATED 4/2/92 BASED ON INFORMATION INCLUDED WITHIN DOCUMENTS 8907 AND 8908 (50237, 50244, 50267)

- (1) per DBPG letter #7097 acrd M.9.D:9. Information
- (2) per 1991 UBC Chapter 9 for sprinklered building (1988 USG similar)
- (4) Requires approved storage cabinet for airy quantity to be stored
- (6) DPD tablets are also classified as a toxic for this room, but 5,000 tablets listed did not include a quantifiable weight/unit: Tenant should weigh tablets arid add weight to toxics total.
- (6) It is assumed that only one container will tea dispensed art a time, therefore room will not be considered a use area

Conversions Used:

1 gallon = 3.79 liters

1 Gallon = 1 lbs (per UPC Article 51)

1 lb = .45 kg

1 cu ft = 7.48 gallon

DISPOSABLE ITEMS TO BE REPLACED BY DURABLES

1. Installation of blow dryers in rest rooms should be investigated and promoted where possible.
2. Fire extinguisher should be refilled rather than replaced when used.
3. Refillable pens and pencils should replace all non-refillable pens and pencils whenever possible.
4. Durable coffee mugs, flatware, and service settings should replace disposable counterparts wherever cost efficient and/or possible.
5. Sponges and durable wash cloths should replace paper towels in breakrooms wherever possible.

RECYCLABLE ITEMS TO REPLACE NON-RECYCLABLES ITEMS

The Department of Ecology, where feasible, will continue to utilize specifications for goods and services with items that are of recycled or recovered materials. Such items are currently being utilized, as in recycled concrete, for the temporary road structure for the New Building Project. The Department will defer to the Department of General Administration for guidance on contract items which make up the majority of Ecology purchases. General Administration has been successful in the past in working with all state agencies in developing these standards.

The Department of Ecology will continue to seek new environmentally sound products in order to achieve its service goal. Ecology will continue to work closely with the Department of General Administration on the development and use of statewide contracts and stronger contracts on environmentally sound products.

REQUIRED PLAN ELEMENT 2.3: Identification and description of actions taken to modify processes or equipment so that less solid or hazardous wastes are generated.

OUR RESPONSE: The following actions are being taken to modify processes or equipment so that less solid or hazardous waste was being generated.

1. Office supplies and all other materials in the office areas are labeled to ensure proper storage and handling.
2. Routine procedures have been implemented to prevent spills and leaks when adding toner to copy machines.
- 3.

Printer cartridges are recharged by General Administration's Office Support Systems.

4. Materials used in the motor pool area are labeled to ensure proper storage and handling.
NOTE: The new building will have a designated hazardous waste area, which will reduce the likelihood of spills and mishandling of hazardous materials. The new building will also have floors with no cracks so that spills can be contained, as well as a filterable slump pump to catch and recycle waste water and solvents.
5. Routine checks and procedures have been instituted to minimize spills and leaks.
6. Vehicles and equipment have routine maintenance schedules.
 - a. Routine oil changes are done every 4,000-5, miles.
 - b. Vehicles are properly tuned every 30,000 miles.
 - c. An annual emission test will be performed on vehicles wherever they are, more than 20 vehicles in a pool.
 - d. Antifreeze is checked annually, but rarely changed. Coolant is checked for pH, contamination and coolant properties. Used antifreeze is recycled by a service agent.
7. Ecology's motor pool is exercising all practical means of recycling and waste reduction, including reuse strategies.
 - a. All used oil is recycled, as are used car batteries and other replacement-type parts.
 - b. The motor pool can use recycled oil for routine oil changes because it is offered on state contract. However, since most oil changes are contracted out, rerefined oil will have to be specified for routine oil changes.
 - c. The shop uses a lower emission 'solvent-like' solution for parts cleaning, that is less flammable than conventional solvent solutions.
 - d. Rather than using paper products, a cleaning service provides shop rags and overall clothing.
 - e. The Transportation Office is looking into "the feasibility of Ecology using electric vehicle and/or natural gas powered vehicles.
- 8.

Listed below are changes that have been made in Ecology's motor pool to replace, reduce, reuse, recycle and make more environmentally safe where circumstances have been identified as hazardous, disposable and non-recyclable materials:

- a. Oil - now purchasing re-refined oil, available on state contract with a cost increase of six or seven cents per gallon.
- b. Part cleaning solvent - now using an environmentally safer solvent that has less fire danger, is less hazardous to the skin and is less dangerous to breath. There is also a cost savings of approximately \$30 every six weeks.
- c. Antifreeze - now using a vendor that recycles antifreeze to replace our doing the service and trying to deal with the used antifreeze.
- d. Air conditioner - now using a vendor that recycles the refrigerant used in the air conditioners.
- e. Floor sweeping compound - testing various brands that are advertised as environmentally sound.
- f. Water - now running vehicles through a commercial car wash instead of washing on-site. There is, therefore, a cost savings: the road debris does not have to be dealt with and the commercial car washes have the capability to recycle the water used.
- g. Paper - now using fewer paper towels and rags by using cloth and having them cleaned.
- h. Ice removal - now using an environmentally safe chemical deicer in place of salt. We share the spreading equipment with city, county and other state agencies in place of purchasing our own.
- i. Waste oil leaks - now have a container to collect leakage if the waste oil drum leaks.
- j. Vehicle fluids - have become more aware of any vehicle fluid drips. Stopping them from continuing and caring for the "drippings" (antifreeze, oil, etc.) after they are on the ground.
- k. Alternative fuel - much research has been done.
 - Compressed natural gas - there is a lack of fueling facilities.
 - Methanol - has adverse problems.

Propane - was looked at but fueling facilities are lacking.
Electric - conversion kit for one of our vehicles has been ordered.

- l. Vehicle flare storage - purchased old ammo boxes from State Surplus Property for sixty-five cents each and bolted them into the trunks of agency vehicles for flare storage. The boxes are air tight, which gives the flares a longer usable life. The boxes will be transferred to the new vehicles.
- m. Emission testing - obtained a used analyzer that allows motor pool to perform emission testing on Ecology vehicles. Although a vehicle may seem to be running without complaint, through testing, some vehicles do not meet the emission specifications and repairs are required.
- n. New vehicle purchases - emissions, fuel and other impact-related questions are being asked before approval is given to purchase a new vehicle.

The following changes were made to Ecology labs:

- l. Analysis methods are specified. Sample volumes, reagents used, and procedures followed cannot be varied if results are to be certified as "per method SW 846, Manual of Methods for QA/QC Sampling, Chapter 9. This limits the ability of the lab to use smaller volumes or less toxic reagents such as chlorinated solvents, chromium VI, and mercury in the wastes.
- m. Waste reduction and pollution prevention plans were started in 1987, but are not yet completed. In 1988, the laboratory issued a Manchester Laboratory Disposal Manual that addresses waste minimization (Chapter IV-10). The Chapter describes the lab purchasing strategy and the chemical inventory system, recommends handling procedures for empty containers and unusable chemicals, and encourages the use of micro techniques and a re-evaluation of existing methods to encourage a reduction of dangerous waste generated by analytical processes (e.g. COD and TOC analysis).
- n. Several of the analytical methods used at Manchester involve the use of solvents, including; freon, hexane, methylene chloride, and ethyl ether. There are significant opportunities to implement recycling/recovery/reuse programs at the lab. EPA and Ecology managers installed manifolds that recover solvent that is being evaporated during analytical methods. When a suitable contractor is found to recycle these solvents, it is estimated that the lab could meet the 50% waste emissions reduction goal.
- d.

60 Fact Sheets have been completed, on all of the waste streams generated as a result of sample analysis and bioassay testing. About 25 of these waste streams generated dangerous waste. Waste disposal facilities accept the Fact Sheets when approving waste for shipment to their facilities.

- e. Several methods (COD, salinity) that produced hazardous wastes have been dropped.
 - f. An in-house generated computer program is used to flag samples that exceed hazardous waste designation levels, to ensure proper disposal.
 - g. Total Quality Management (TQM) principles and practices have been in use for two years. The goal is to enable continuous reduction of rework, which means re-extraction and re-analysis. Both of these procedures can contribute to, waste generation in the lab.
 - h. During 1991 and 1992, lab staff have been investigating the use of supercritical fluid extraction (SFE), which promises to greatly reduce the use of solvents in organics extractions.
 - i. EPA has installed a new 10,000 gallon underground fuel oil tank, with leak detection and monitoring instruments, to replace an aging tank without the required monitoring devices.
 - j. A chemical inventory has been performed and a chemical inventory system has been established at the laboratory. Chemists are allowed to order chemicals in the smallest quantities necessary to do their work, and chemical purchases are processed through a central ordering point to avoid duplicative ordering.
10. Copy centers: Conditions vary from copy center to copy center, but in general, solvents are sent to the State Printer for recycling.
11. Warehouses: Stock replacements are made as recycled content items become available.
- a. The following recycled items are now being stocked in the warehouse:
 - Adding machine tape
 - Binder, 3-ring in various sizes and styles
 - Double pocket portfolio in various colors
 - Easel pads
 - Envelopes in various sizes and styles
 - File pockets, expanding, legal and letter size

Folder, file in various sizes and styles
Letterhead stationery
Pad holder, with ruled pad
Pad, writing
Paper, xerographic in various sizes and styles
Post-it notes in various sizes
Report cover in various sizes, styles and colors
Table, writing, ruled, white paper in legal and letter size

- b. Pallets are reused as much as possible. Old ones are set out as firewood.

REQUIRED PLAN ELEMENT 2.4: Identification and description of actions to be taken to reduce the amount of organic materials that are generated, to compost or reuse organic materials, and, any barriers to implementing these actions.

OUR RESPONSE:

1. A composting system is in place for the office surveyed for this plan. However, composting systems are typically not being used for Ecology offices. In the office that was reviewed, food wastes are collected in a small covered bucket in the break room and fed into a worm bin outside. At this time,, all office buildings are being considered for a worm-bin composting system.

NWRO collects food waste for composting. Coffee grounds are collected separately for landspreading (helpful for acid loving plants). Food waste is "composted" in two Green Cone' food waste digesters and two worm bins are on order. Yard debris composting will begin soon.

2. Ecology does not lease any food service areas at this time. Most food waste streams are generated in employee break rooms and individual offices and can be handled easily with worm bin composting systems. Plans for handling this particular waste stream in the new building include providing sufficient service areas for recycling and composting. Other management systems for specific operations unique to this facility have yet to be developed.
3. The food waste stream for the new building should be projected and composting plans should be developed. A G.O.L.D. sub-committee has been formed to develop a composting plan for Ecology.
4. The yard waste generated at the new building site should be composted on-site. A G.O.L.D. sub-committee is looking into this.

REQUIRED PLAN ELEMENT 2.5: A description of waste reduction and recycling options to be incorporated into agency. publications.

OUR RESPONSE:

1. Documents are requested to be printed double-sided except for cases where it would be inappropriate.
2. Non-chlorinated and post consumer content paper and paper products are routinely requested.
3. Publication purchases should be consolidated through the Ecology Library or Resources Centers where they can be checked out or routed for distribution.
4. Ecology employees should avoid having new Ecology publications shrink-wrapped by the State Printer whenever possible. When unavoidable, make recycling options available.
5. Only vegetable-based inks should be used and requested; inks containing highly toxic or metallic materials should be avoided.
6. Ecology employees should avoid the use of brightly colored, hard to de-ink, papers for office use and publications. Pastel colors are easier to de-ink.
7. A uniform procedure should be established to better handle unnecessary printing of brochures.

OBJECTIVE 3 - To develop and implement a state government policy to increase state government's use of products that are made with recovered materials, and that are reusable, recyclable, nontoxic, or otherwise more environmentally-sound than products currently used.

REQUIRED PLAN ELEMENT 3.1: A procurement policy which incorporates the guidance provided by executive Order 90-06 and the bid preference rule which G.A. will be adopting pursuant to Chapter 43. 79 RCW. The plan should also describe how the policy will be communicated to staff and how its effectiveness will be monitored.

OUR RESPONSE: Ecology is subject to ESSB 5143 (which has revised Chapter 43.19 RCW), a new statute requiring state government agencies to buy a variety of recycled content products and review existing contracts for environmental criteria. In addition,

Ecology has adopted Administrative Policy 8-19, entitled, Purchasing and Using Environmentally Sound Paper Products and Is in the process of piloting a policy entitled Employee Waste Reduction and Recycling Practices (see Appendices C and D respectively).

REQUIRED PLAN ELEMENT 3.2: Demonstration that the requirements of the bid preference have been incorporated into the purchasing practices for the agency or institution.

OUR RESPONSE: Ecology, like all state agencies, is obligated to buy hundreds of commonly used items and services through G.A.'s mandatory-use contracts. G.A. has provided language in their contracts explaining the bid preference requirements to bidders. The bid preference requirements are found in the Special Terms and Conditions section of their contracts under PROCUREMENT OF RECOVERED MATERIALS (see Appendix E1).

REQUIRED PLAN ELEMENT 3.3: Identification of contracts and associated specifications that will be modified to encourage contractors to use recycled products or other products and practices which reduce the amount or toxicity of wastes generated as a result of contract obligations.

OUR RESPONSE: Ecology has no legislative authority to request that state contractors use products that are made with recycled materials and which reduce environmental degradation. However, we can suggest that GA consider this request, and make the necessary provisions in the state contracts. The G.O.L.D. Committee will recommend that all Ecology contracts include this requirement for our contractors.

ACTION ITEMS:

Waste Reduction/Procurement

1. The Ecology G.O.L.D. Committee and/or Ecology should make a formal request to G.A. to provide language in their contracts that would require those who contract with the State to use products that are made with recycled materials, and Which reduce environmental degradation. v
2. Ecology contractors should include language in all Ecology contracts requiring contractors to use products that are made with recovered materials, and which reduce environmental degradation.

OBJECTIVE 4 - To source-separate and recycle all materials which can feasibly be recycled at all existing and future state government facilities.

REQUIRED PLAN ELEMENT 4.1:

1. Contact persons and list of all facilities where recycling programs will be implemented
2. List of all materials to be recycled at each facility
3. Description of actions taken to increase the quality or quantity of recycled materials
4. Description of the barriers to increased recycling

OUR RESPONSE:

1. Contact persons are the building coordinators. 2. Items collected for recycling include: white paper, mixed paper, cardboard, aluminum, newspaper, tin cans, food waste, and glass containers (see Appendix A for recycling percentage rates for individual items). Recyclable items that are still being disposed include organic wastes, mixed waste paper, cardboard, plastics, glass and white office paper. The following is a list of facility-specific items that are collected for recycling.

- Motor Pool: In addition to the office collection system, used oil is collected for rerefining.

- Manchester Lab: EPA provides collection services through a janitorial contract. Office paper, cardboard, aluminum cans and polystyrene packing materials are collected for recycling. No chemicals or solvents are collected for recycling at this time due to the difficulties they have had finding reputable recyclers and the liabilities associated with improper handling. Any recycling contractor for the lab would have to meet EPA off-site policy requirements and undergo the scrutiny of an onsite visit to ensure recycling processes are being conducted properly. A Continuous Extractor/Jacketed Concentrator has been recently purchased for recovery of evaporated methylene chloride. A Zxmark Evap Station was also purchased for evaporated solvent recovery.

- EILS Labs: Acetone, methanol and methylene chloride are collected and recycled.

- The Copy Centers: White and mixed waste paper are collected as are solvents and inks.

- Warehouses: Cardboard, packing material and paper recycling is in place, but aluminum and glass are collected and recycled by staff on their own time.

- The Cartographic Center: Participates in the collection system provided by Baron Hall. Negatives are taken to the Department of Transportation where they recycle the silver, and the plotter pens are nonrecyclable.

- The Padilla Bay National Estuarine Research Reserve: Paper, aluminum and batteries are collected for recycling.

- The new headquarters building: Outside, the new Ecology building will have seven two-yd. dumpsters for recycled materials and one dumpster for trash. Inside, the new building will have 20 recycling stations. There will be seven barrels per station, two for paper and five for other materials yet to be determined.

(NOTE: A list of building services for Ecology in Thurston County is provided in Appendix F.)

3. Actions to be taken to increase the quality or quantity of recycled materials include,

- Investigating contracting collection services for cans, glass and other recyclables (beyond paper).

- Coordinating efforts to recycle things that have no buy back value.

- Cleaning and recycling more containers in the FILS Tabs.

- Establishing a State contract to standardize toner purchases.

- Investigating the resin type of the plastic strips on paper reams for recyclability or see if the supplier could take them back.

- Requesting recyclable ream wrappers.

- Expanding the Padilla Bay Reserve collection contracts to include items such as glass, oil, and tin.

4. Description of barriers to recycling:

- Markets need to be developed to create a demand for recyclables. Agencies can contribute to creating this demand by buying a wide variety of recycled content and waste-reduced products.

- Collection programs need to be coordinated, especially in rural areas where recycling opportunities are sparse.
- Participants in collection programs need to be kept up to date on how, what, where, and when collection takes place.
- Virgin material extraction costs and waste disposal costs are hidden by government subsidies.

REQUIRED PLAN ELEMENT 4.2: List of future capital projects which will generate solid waste, target dates for projects, project contracts, and demonstration that recycling will be fully incorporated into the facility.

There are two future capital projects which will generate solid waste; a new facility at the Central regional Office, which is due for completion in 1993, and the new headquarters building in Olympia, due for completion July 1993. Contracts for each investment include detailed provisions for collection systems.

OBJECTIVE 5 - To provide state government employees, facility residents, students, and visitors with the incentives and education needed to achieve maximum levels of waste reduction and recycling at state government facilities.

REQUIRED PLAN ELEMENT 5.1: Description of educational and training efforts to be implemented.

OUR RESPONSE: A leadership role in the implementation of the G.O.L.D. Plan will require a broad-based and comprehensive education/outreach effort to inform both staff and management of the following key points:

- The G.O.L.D. Plan represents the state's dedicated effort to responsibly reduce and manage its waste.
- Due to the nature of our "business," Ecology needs to be a G.O.L.D. Plan leader, a "model" agency.
- Participating in the G.O.L.D. Plan is easy. This means being more aware of what we are doing at work and being willing to change some practices.
- We have a special opportunity to design the G.O.L.D. Plan strategies and techniques into our new headquarters building in Lacey.

This education effort needs to reach everyone at headquarters and the regions, clearly describing the nature and objectives of G.O.L.D. and what we need to do "at our desks" in order to meet the goals and objectives in our plan.

ACTION ITEMS:

Education

1. A G.O.L.D. Plan "column" in Ecology Today, featuring facts or success stories from guest writers. This should be prepared by and coordinated by the G.O.L.D. Plan coordinator. A small "thermometer" graphic could be used to indicate the volume of waste we have reduced or diverted from the landfill.
2. G.O.L.D. Plan "Fact", "Tip", and "Focus" sheets outlining the what, where, when, why and how of personnel participation. See Appendix H for a sample Tip Sheet.
3. "Institutionalizing" the Q.C.L.D. Plan participation by:
 - a) Including the G.O.L.D. Plan in new employee orientations.
 - b) Encouraging and or recognizing G.O.L.D. Plan participation during annual employee performance review and evaluations.
4. Make periodic presentations to EPT/EMT regarding G.O.L.D. Plan implementation and performance updates.
5. Creating an annual G.O.L.D. Plan awards/recognition ceremony, rewarding individuals, programs or buildings for outstanding waste reduction or diversion successes.
6. A computer-based G.O. L. D. Plan "network" for sharing anecdotes, success stories or techniques between programs.
7. A coordinated training program for key personnel, creating "master reducers/recyclers" in each program, linking this group with a lead G.O.L.D. Plan person at WRRLC.
8. A G.O.L.D. Plan newsletter, prepared through/by the G.O.L.D. Plan coordinator and edited either internally or through I & E.
9. Solicit new ideas, and generate stories for marketing through the "success story" formula reference above.
10. Creating a release/campaign strategy and timeline for outreach to the national consumer and special interest publications and radio and TV broadcasters.

OBJECTIVE 6 - To increase communication between state employees, Washington state citizens, the Legislature, and focal jurisdictions regarding waste reduction, recycling, and procurement actions taken at state facilities and the results of such actions.

OUR RESPONSE: Ecology will track programs to reduce, recycle, and procure products with recycled content and will report the findings through the General Administration Reporting Guidelines. An initial report based on these guidelines will be submitted to G.A. by September 1992, and annually thereafter.

IMPLEMENTATION OF ECOLOGY'S IN-HOUSE G.O.L.D. PLAN

Now that the G.O. L. D Plan has been completed, an in-house G.O. L. D. Plan coordinator will oversee the implementation and monitoring of its recommended waste reduction, recycling, procurement, energy and water conservation, and education and promotional programs.

Some major themes came out of the G.O.L.D. Committee meetings concerning what is needed for successful implementation of this plan. They are:

1. Education (i.e., training for facilities officers) will be the most critical task
1. to be able to accomplish the goals of the GOLD Plan.
2. We need to prioritize activities and suggestions.
3. Implementation should be phased in gradually.
4. The Action Items of the GOLD Plan should not be mandatory. The committee needs to work with people to get them to want to be involved.
5. We still need to provide choices and options, while making changes.
6. The Plan needs to be supported, and shown by example, from the top down.
7. We should not expect everyone to jump on the bandwagon right away. All change takes time.
8. WRRLC needs to provide technical assistance and education to Ecology as they do others.
9. All programs should be involved.

10. Regional offices especially need to be involved because conditions are different in the regions.

11. Recycling needs to be made as convenient as possible.

APPENDIX A

WASTE AUDIT DATA CHARTS

DEPARTMENT OF ECOLOGY							
EXTRAPOLATION OF DUMPSTER DATA							
FROM SARAN HALL ON 4/18/92							
FACILITIES	#STAFF	RECYCLED	DISPOSED	RECYCLED	DISPOSED	GENERATION	RECYCLING
		PER CAP/WK	PER CAPIWK	# PER WK	# PER WK	PER WK	%
Baran Hall	130	2.22	1.10	288.50	142.50	431.00	67%
Prudential	78			173.10	85.50	258.60	
6015 Capitol Boulevard	5			11.10	5.48	16.58	
Chandler Court	18			39.95	19.73	59.68	
Eikenberry	56			124.28	61.38	185.66	
Rowesix, Bldg 2	24			53.26	26.31	79.57	
Rowesix, Bldg 4	87			193.07	95.37	288.44	
Homann Bldg	4			8.88	4.38	13.26	
5826 Pacific Ave	22			48.82	24.12	72.94	
Building #4, 2403 Pacific Avenue	10			22.19	10.96	33.15	
Building #6, 2407 Pacific Ave.	5			11.10	5.48	16.58	
Tanglewilde Bldg	27			59.92	29.60	89.52	
Moduline	57			126.50	62.48	188.98	
WON, Bldg 8, Airdustrial Park	57			126.50	62.48	188.98	
99 South Center Bldg	49			108.74	53.71	162.45	
Cleveland Plaza	13			28.85	14.25	43.10	
SWRO - WRRLC	19			42.17	20.83	62.99	
SWRO	110			244.12	120.58	364.69	
Woodland Square	68			150.91	74.54	225.45	
Krueger Bldg	39			86.55	42.75	129.30	
AR & Sawyer Hall	187			415.00	204.98	619.98	
College Ave. Bldg	56			124.28	61.38	185.66	
TOTAL THURSTON COUNTY	1121			2,487.78	1,228.79	3,716.55	87%
CAVEAT EMPTOR:							
This was not a scientific survey. The result was from only one sample.							
It did not represent the Ecology universe. Use this data at our own risk.							
O:USERSWOYWASTEGEN.XLS							

BARON HALL DUMSTER DIVE

BARON HALL	INSIDE RECYCLE BIN		OUTSIDE BIN	
CATEGORY	LBS	PERCENT	LBS	PERCENT
WHITE PAPER	121	41.94	0.5	3.5
MIXED PAPER Recyclable	116.5	40.38	17.5	12.28
MIXED PAPER, Non-Recyclable	2	0.69	28.6	20
CARDBOARD			14.4	10.8
ALUMINUM	5.5	1.9	1	0.7
NEWSPAPER	24	8.31		
TIN CAN	0.5	0.17		
FOOD WASTE			27	18.94
PLASTICS			10	7
WOOD SCRAP				
HAZARDOUS WASTE				
GLASS	19		9	6.3
STYRO FOAM			0.1	0.07
REST ROOM WASTE Unsorted			8	5.6
FLUORESCENT LIGHT BULB			1.5	1
OTHERS			19.5	13.68
TOTAL	288.5 LBS	100	142.5	100

APPENDIX B

COMPOSTING FOOD WASTES

Composting Food Wastes

Non-fatty food wastes may be composted by incorporating them into the soil where they will break down to fertilize established or future plantings; placing them in worm bins which produce high quality "casting" for use on plants indoors or out; or layering them in hot piles along with yard wastes as described in the previous chapter. Food wastes incorporated into the soil can take from one month to one year to fully decompose; worms require three to six months to transform a bin of wastes into "verimcompost"; and hot piles can compost a mixed load of food and yard wastes in three weeks.

Soil Incorporation is the simplest method for composting food wastes: A hole is dug and the food wastes are chopped and mixed into the soil, then covered with at least 8" of additional soil. Depending on soil temperature, the number of micro-organisms in the soil, and the carbon content of the wastes, decomposition will occur in one month to one year. The decomposition is carried out primarily in anaerobic conditions, so it is less efficient than either turning or worm composting units. Food wastes such as meat, bones, or fatty foods such as cheese and salad dressing are not recommended for soil incorporation: These foods are potential attractions for rodents, dogs, cats or flies.

Food wastes can be incorporated around the drip line of trees or shrubs by using a posthole digger, or they may be buried in a fallow area of an annual garden. A trench may be dug and filled with soil as food waste is added.

English gardeners practice a form of soil incorporation known as "pit and trench" composting. This is a simple three year rotation of soil incorporation of kitchen wastes, growing crops, and pathmaking. In the first year a trench is dug, filled with food wastes and covered. At the same time, another row is used to group crops and a third is used as a path. In the second year the fertile soil of the former compost trench is used to group crops, the former crop row is used as a path, and the path is dug as a new trench. After a third year of rotation, the cycle starts again. This form of composting keeps the garden perpetually fertile with a small organizational effort.

Worm Composting bins are commonly wood boxes with lids used to provide worms with a dark and moist environment to live and eat vegetative food wastes in. Worms are "bedded" within these boxes in shredded and moistened newsprint, corrugated cardboard or other cellulose materials. Wastes are buried in this bedding and burial spots are rotated in an organized progression. Worms turn the food wastes and bedding into a high quality soil amendment suitable for use on house plants, vegetable seedlings and flowers. With a little understanding of worms' needs, "vermicomposting" systems are simple to maintain. Two or three times a year a few hours are spent preparing bedding and harvesting compost and worms.

Worm bins are a fun and interesting way to compost non-fatty kitchen wastes. In addition, they compost the newsprint, cardboard or other wastes used as bedding. Worm bins are most efficient if sized and stocked according to the amount of waste to be handled. Mary Applehof's book *"Worms Eat My Garbage"*, provides excellent information on how to determine what size a worm bin should be, and the amount of bedding and worms required for an efficient system. Surface area is more important than depth in sizing a worm system; generally, one square foot of surface is required for every pound of food waste to be composted per week.

To start a vermicompost system, "Red worms" (not earthworms) must be bought or taken from a manure pile to stock the bin. When most of the contents of the bin have become dark "worm castings", the contents may be harvested and used. The compost may be harvested by moving it all to one side of the bin and adding fresh bedding to the empty side. Worms will migrate to the fresh bedding, restocking the bin and allowing compost to be removed.

The worm bin pictured here is Mary Applehof's "1-2-3 Portable Worm Bin" (1" deep, 2" wide and 3" long). This box has a bottom so that it can be moved and used in a garage or basement. If a box is going to be used outdoors only it does not need a bottom, although you may want to line the bottom with rocks or boards to keep rodents from tunneling in. Bins must be constructed with holes for aeration, though cracks between boards will achieve the same end and are inevitable in home construction.

Compost Uses:

Compost can be used to enrich the flower and vegetable garden, to improve the soil around trees and shrubs, as a soil amendment for house plants and planter boxes, and when screened, as part of a seed-starting mix or lawn top-dressing. The best time to dig compost into a garden bed is when preparing the bed for planting, either by seed or transplant. If only a small amount of compost is available, it can be spread under the seed furrow or a handful can be added to each transplant hole. Compost is also an excellent top dressing and can be placed around flower and vegetable plants, shrubs, and trees.

By using compost, organic matter is returned to the soil in a usable form. Organic matter in the soil improves plant growth by helping to break heavy clay soils into a better texture, by adding water and nutrients to any soil. Compost is classified as a soil conditioner rather than a fertilizer, but it can contain a good range of major and minor plant nutrients plus trace elements essential for healthy plant growth.

Another way to use compost is to make compost tea. As the illustration to the left shows, compost is placed into a burlap bag and inserted into a barrel of water. The nutrient rich tea is then used to irrigate the garden. For a more nitrogen rich tea, fresh manure can be used instead of compost.

APPENDIX C

PROPOSED EMPLOYEE WASTE REDUCTION AND RECYCLING POLICY

May 27, 1992

Policy and Procedure: Employee Waste Reduction & Recycling Practices

Purpose:

The purpose of this policy is to minimize the waste of material, energy, and water resources at all facilities and operations in the Department of Ecology. Ecology employees will provide a leadership model for state agencies and institutions as well as the general public. Whenever possible, each of us will actively seek to replace wasteful habits with resource-saving habits.

Application:

This policy applies to all Ecology employees.

1. Program Policy Affects Procurement Decisions

All employees will request environmentally sound products whenever possible. We will:

- Request durable and reusable products over disposable counterparts whenever possible (e.g., refillable pens, food service items, batteries, hand towels, etc);
- Request the least toxic version of a product whenever possible;
- Request post-consumer content products and packaging whenever suitable products are available and within budgeting constraints;
- Request light-weighted packaging whenever possible;
- Minimize the use of brightly colored, hard to de-ink papers. Alternative attention grabbers include using colored markers across the top of the first page or using graphics; and
- Avoid use of non-recyclable, self-adhesive products and manufactured note pads until such time they are recyclable at user's facility.

2. Policies Affecting Employee Actions

At each copier and printer, hexes will be designated for usable paper that is printed on one side. This paper will be used for printing internal drafts and memos. Fear clarity, lines may be drawn through the previously, -used side.

All Ecology employees wilt:

A. Conserve paper: Whenever possible employees will:

- Review network fides for comment on internal memos and drafts. Our second choice will be to print using paper that has been used on one sided'
- Separate one-sided, used paper white office and mixed grades) suitable for reuse in printers and copiers from used paper designated as suitable for note pads;
- Assure that all used paper separated for reuse in printers and copy machines is free of staples, fields, sticky hates and attached labels (these papers will be made into hate pads;
- Use paper clips instead of staples or reusable folders as much as possible to encourage reusability of paper and fasteners;
- When feasible, avoid using envelopes for mailing and use "self-mailers" as much as possible;
- When suitable to do so, employees wilt reuse envelopes larger than standard #11 for internal or external mailings;
- Use "View Document" (shift F7, #6) capability of WF5.1 as needed before printing any document to avoid printing errors;
- Ensure copies of all outgoing correspondence and reports are double sided, letterhead letters included. If a document must be printed on one side only, this request must be made to Administrative Support staff; and
- Fax materials only as necessary, not as the routine way of circulating materials. When faxing is warranted, use of a rubber stamp to convey needed information on outgoing faxes is preferable to using a cover sheet.

B. Conserve Operating Supplies. Whenever possible employees will:

Keep mailing lists current and refuse duplicate copies when not needed;

Use reusable pencils and pens rather than the disposable versions;

Use durable mugs, plates and utensils; and

Create a reuse area in supply rooms that is just as accessible as the area where new products are kept.

C. Recycle. Whenever possible employees will:

- Participate in their office recycling program;
- Participate with their section in organizing pickup services for cans, glass, plastics, and other materials not serviced by the facility collection contract;
- Choose facilities that practice recycling for meetings, workshops, and conferences;

D. Compost. Whenever possible employees will:

- Participate with their section in a food composting system on-site. For technical assistance call the WRR&LC Program.

APPENDIX D

ECOLOGY IN-HOUSE POLICIES

Chapter 8: Purchasing/Inventory/Payables

Policy 8-19

Resource Contact: Waste Reduction, Recycling, and
Litter Control Program Manager

Effective: January 7, 1992

References: POL 4-05, PRO 4-05-01,
Ecology Purchasing Policies

Revised: January 22, 1992

Purchasing and Using Environmentally Sound Paper Products

- Purpose:** To stimulate and create demand for paper products containing the highest level of post-consumer and recovered material possible and whose virgin fibers have not been bleached with chlorine gas or hypochlorite.
- Application:** This policy applies to the purchase of paper, paper products or printed materials.

1. Environmentally Sound Paper Defined.

Paper and paper products that contain the maximum amount of post-consumer and recovered materials available and have not been bleached with chlorine gas or hypochlorite represent the most environmentally sound paper of choice. "Post-consumer" materials are products that have served their intended use and have been discarded for disposal or recovery by a final consumer.

2. Employees Use Environmentally Sound Paper to the Fullest Extent Possible.

Employees will request environmentally sound paper and paper products purchases. Such selection shall routinely be made when the price of environmentally sound paper is no more than ten percent greater than its chlorine-bleached, non-recycled counterpart. Chlorine-bleached and/or non-recycled paper or paper products may be purchased on a trial basis with Purchasing Unit concurrence.

When environmentally sound paper is not available, paper and paper products that contain at least ten percent post-consumer waste are preferable to non-recycled paper products or products that contain no post-consumer waste.

3. Employees Order Printed Material on Environmentally Sound Paper.

On all Preliminary Printing Requests and Copy Center Requests, employees will request that environmentally sound paper be used when the use of such paper is no more than ten percent greater than its non-environmental counterpart. Employees will ensure that all Ecology publications and reports are printed on environmentally sound paper to the fullest extent possible.

All printed material will carry identification of the recycled paper symbol and the words "Environmentally Sound."

Approved: _____

Jim Martin
Assistant Director
Financial, Personnel and Support Services

APPENDIX E

DEFINITIONS AND PREFERENCE LANGUAGE IN G.A. MASTER CONTRACT

6. CONTRACT ADMINISTRATOR

An individual designated by the State of Washington, Department of General Administration. Office of State Procurement to act on behalf of the State to develop and administer contracts within the limits established by law.

7. CONTRACTOR'S REPRESENTATIVE

An individual, or individuals, designated by the Contractor to act on its behalf and with the authority to legally bind the Contractor concerning the terms and conditions set forth in bid and contract documents.

8. CONTRACT DOCUMENTS

Documents which comprise an entire agreement.

9. CONVENIENCE

THIS contract is established strictly for the convenience of State agencies and/or Political Subdivisions and any purchase against this agreement is at their discretion.

10. POLITICAL SUBDIVISION

Any unit of local government in receipt of State funds; e.g., cities, Counties, school districts, special purpose districts, local service districts, authorized to purchase under State agency Contracts by virtue of interlocal agreement(s) entered into pursuant to Chapter 39.34 RCW and by the terms of a specific contract.

11. MANDATORY

State agencies are mandated to utilize this contract for all acquisitions of materials, equipment or service designated herein. This section does not apply to acquisitions by Political Subdivisions. Reference Section II, Paragraph 1B (Items Included).

12. PURCHASER

Purchaser shall mean my State agency(ies) and/or Political Subdivision(s) indicated as authorized contract users.

13. RECOVERED MATERIAL CONTENT PRODUCTS

(1) "Post Consumer waste" which is:

- (a) Paper, paperboard, and fibrous wastes from buildings such as retail stores, office buildings, [and] bona fide after the waste have passed through their end-use as a consumer item, including: Used corrugated boxes, old newspapers, old magazines, mixed waste paper, tabulating cards, and used cordage; and

- (b) All paper, paperboard, and fibrous wastes that enter and are collected from municipal solid waste; and
- (c) All other items containing plastics, yard waste, metals, glass, rubber, Oil, or any other material that is suitable as feedstock in product manufacture; and

(2) "Secondary waste" including manufacturing and other wastes such as:

- (a) Dry Paper and Paperboard waste generated after completion of the papermaking process, that is, those manufacturing operations up to and including the cutting and trimming of the paper, machine reel into smaller rolls or rough Sheets including: Envelope cuttings, bindery trimmings, and other paper and paperboard waste resulting from printing, cutting, forming, and other converting operations; box and carton manufacturing wastes; and butt rolls, mill wrappers, and rejected unused stock;
- (b) Rushed paper and paperboard from obsolete inventories of paper and paperboard manufacturers, merchants, wholesalers, dealers, printers, converters, or others;
- (c) Wastes generated by the convenience of goods made from fibrous material, that is, waste rope from cordage manufacture, textile mill waste, and cuttings; and

(d) Fibers recovered from wastes, water which otherwise would enter the waste streams.
[1988 c175 § 1; 1988 (1 § 1)]

14. STATE AGENCY

Agency shall Include: state institutions, colleges, community colleges and universities, the offices of the elective state officers, the supreme court, the court of appeals, the administrative and other departments of state governments, and the offices of all appointive officers of the state, excluding the legislature.

23. PROCUREMENT OF RECOVERED MATERIALS

- A. Bidders are encouraged to offer products with recovered material content. Bids offering products containing recovered material a defined herein receive a preference of 10% in determining the lowest responsive bid for any item or grouping of items to be awarded to a single bidder in accordance with WAC 136.08.096. This procedure will be separate from and applied after any other preference allowed by statute. To qualify for the preference, bidder must provide with bid a certification of the recovered material content by the producer of the goods which must also be at least functionally equivalent to all other bid specifications and use requirements. The preference shall be used for bid evaluation purposes only and the actual dollar bid shall be the contracted amount. In the event of a tie for lowest responsive bid between product/ otherwise meeting all bid specifications, the buyer shall consider the lower post consumer material content as a factor in determining award.

To be responsive to this requirement and receive the preference, products bid must contain minimum recovered material content of

- _____ That given in current issue of E.P.A. Guidelines
- _____ % recovered material content
- _____ Post consumer content
- _____ Waste content

- B. This Invitation for Bid has been determined exempt from the provisions of WAC 236.4E.096 regarding preference for products with recovered material content for reasons including inadequate completion, economics, environmental constraints, quality or availability.
- C. For the purpose of meeting Resource Conservation and Recovery Act requirements for state agency purchase of goods meeting Environmental Protection Agency recovered guidelines specifications have been adopted herein which require that only goods meeting those special guidelines will be responsive in accordance with WAC 236.48.096.

24. REFERENCES

Bidder shall furnish in Section VIII, Attachment ____ a minimum of three (3) private or public sector references for which bidder has delivered goods and/or services on contract similar in nature, scope and duration to the contract contemplated herein.

APPENDIX F

BUILDING SERVICES FOR ECOLOGY THURSTON COUNTY BUILDINGS

**Building Services for Ecology
Thurston County Buildings**

Name	Service	Day	Amount
321 Cleveland	Garbage	T F	1 - 2 yards
6101 Capitol Way	Garbage	0	0
99 Southsound Center	Cardboard	M T W Th F	
	Garbage	M	1 - 1 1/2 yards
	Paper	W	
Abbot Raphael Hall	Cardboard	T	
	Garbage	M	1 - 1/2 yards
	Misc.	On Call	
	Paper	F	
Airdustrail Bldg. #8	Garbage	T	1 - 1 1/2 yards
Baran Hall	Cardboard	T	
	Garbage	M	1 - 3 yards
	Paper	Th	
Carpenter Road Warehouse	Garbage	0	0
Chandler Court	Garbage	0	0
College Street	Garbage	M W F	1 1/2 - 2 yards
	Paper	T	
Eikenberry	Garbage	Th	1 1/2 - 2 yards
	Paper	F	
Homann	Garbage	W	1 - 1 1/2 yards
	Paper T		
Krueger	Garbage	M	1 - 1 1/2 yards
	Paper	T	
Moduline	Garbage	M W F	1 1/2 - 2 yards
Pacific Avenue	Cardboard	T	
	Garbage	T	1 - 1 1/2 yards
	Paper	T	
Prudential	Garbage	Th	1 1/2 - 2 yards
	Paper	F	

Name	Service	Day	Amount
Rowesix, Building #2	Garbage Paper	M Th F	1 1/2 - 4 yards
Rowesix Building #4	Garbage	M Th	1 1/2 - 4 yards
Sawyer Annex	Cardboard Garbage Misc. Pager	T M On Call F	1 - 3 yards
Sawyer Hall	Cardboard Garbage Misc. Paper `	T M On Call F	1 - 3 yards
Southwest Regional Office	Garbage	O	O
Tanglewilde	Cardboard Garbage Paper	T M Th T	7 - 1 1/2 yards
Warehouse	Garbage	T	1 - 1 1/2 yards
Woodland Square	Cardboard Garbage Paper	T Th F	1 1/2 - 2 yards

APPENDIX G

PREFERRED PACKAGING PROCUREMENT GUIDELINES

APPLICATION OF WASHINGTON RETAIL ASSOCIATION (WRA) PREFERRED PACKAGING PROCUREMENT GUIDELINES TO PAPER PURCHASES

The WRA Preferred Packaging Procurement Guidelines are a voluntary effort of retailers to procure environmentally sound packaging. The Guidelines are based on the following hierarchy:

- Eliminate the package when possible;
- Minimize the amount of material used;
- Reuse the package, if possible; and
- Use Recycled Content and/or Recyclable materials when possible.

The two major parts of the packaging to be considered here are the paper ream wrapper (primary packaging) and the corrugated shipping container (secondary packaging).

PAPER WRAPPER:

Some protection of individual reams of paper is necessary. WRA proposes the following standard for packaging made of paper:

- 20% to 40% post-consumer recycled content by July 1, 1993; and
- 40% to 60% post-consumer recycled content by July 1, 1995.

Manufacturers should be asked to supply the highest amount of post-consumer and/or other recycled content possible without compromising other packaging performance specifications.

REUSABLE CORRUGATED SUBSTITUTE:

It is possible that a reusable secondary packaging system will be developed in the next two years. The Washington Department of Ecology is looking into this.

A secondary packaging system that meets all the necessary performance specifications should be used, when available.

CORRUGATEDCONTAINER:

Corrugated containers are 11.2 percent of all, waste generated in Washington State, and. 42. 6 percent, of packaging waste., Nationally, corrugated, containers are 8 percent of total discards.. Lightweighting of corrugated is a form of waste reduction and is: are essential component of any solid waste management strategy.

The rules. which formerly governed manufacture of Corrugated containers used in shipping by common carrier were written during the early 1900s in response to a shipping environment in which boxes were tossed around. To protect. the product, a. burst test was developed to measure the strength of the box from the inside out, acrd required that a certain amount of fiber be used in each box. Today's shipping environment, in which containers are stacked several high, calls for a different standard. Containers must be strong from, the: outside in. A compression test has become the new standard.

The rules governing manufacture. of corrugated containers used, in shipping by common carrier (Item 222 and Rule 41) were recently changed to allow a compression test in lieu of the burst test. Moving away from the old basis weight standard toward a performance standard allows fiber reduction. without functional sacrifice.

Manufacturers should be asked to supply piper in corrugated containers that

- Use the least possible amount material;
- Use the highest possible level of post-consumer and/or other recycled content material; and
- Meet the performance standards set by Item 222 and Rule 41.

APPENDIX H
G.O.L.D. TIP SHEET SAMPLE

Don't Throw It Away!

Paper makes up the largest portion of the solid waste stream-and state government is notorious for generating piles of waste paper. But there are lots of simple ways to use less paper to get our jobs done. And remember to reuse or recycle the paper you do use!

- Make copies on both sides of the page. If you don't have a double-sided copier, send your jobs to the copy center, where they do have one.
- Save paper that's blank on one side, and use it to print drafts on a laser printer (remember to remove any staples!). You can use colored scrap paper for notepaper before you recycle it.
- Make sure your office is using recycled paper-it's available from Central Stores. You're not really recycling until you use recycled products!
- Fax paper is not recyclable. Try to plan ahead so you can use mail instead of faxing, or send information on computer networks or by modem. Replace fax transmittal sheets with small "sticky notes," available from Central Stores. (Reproduce a sample fax Post It?)
- Cut down on the paper you use for interoffice memos by routing one copy, circulating a computer disk, sending a file on electronic mail or a message on a voice mail system. You can route periodicals and reports, too.

For more information, contact your agency recycling coordinator.